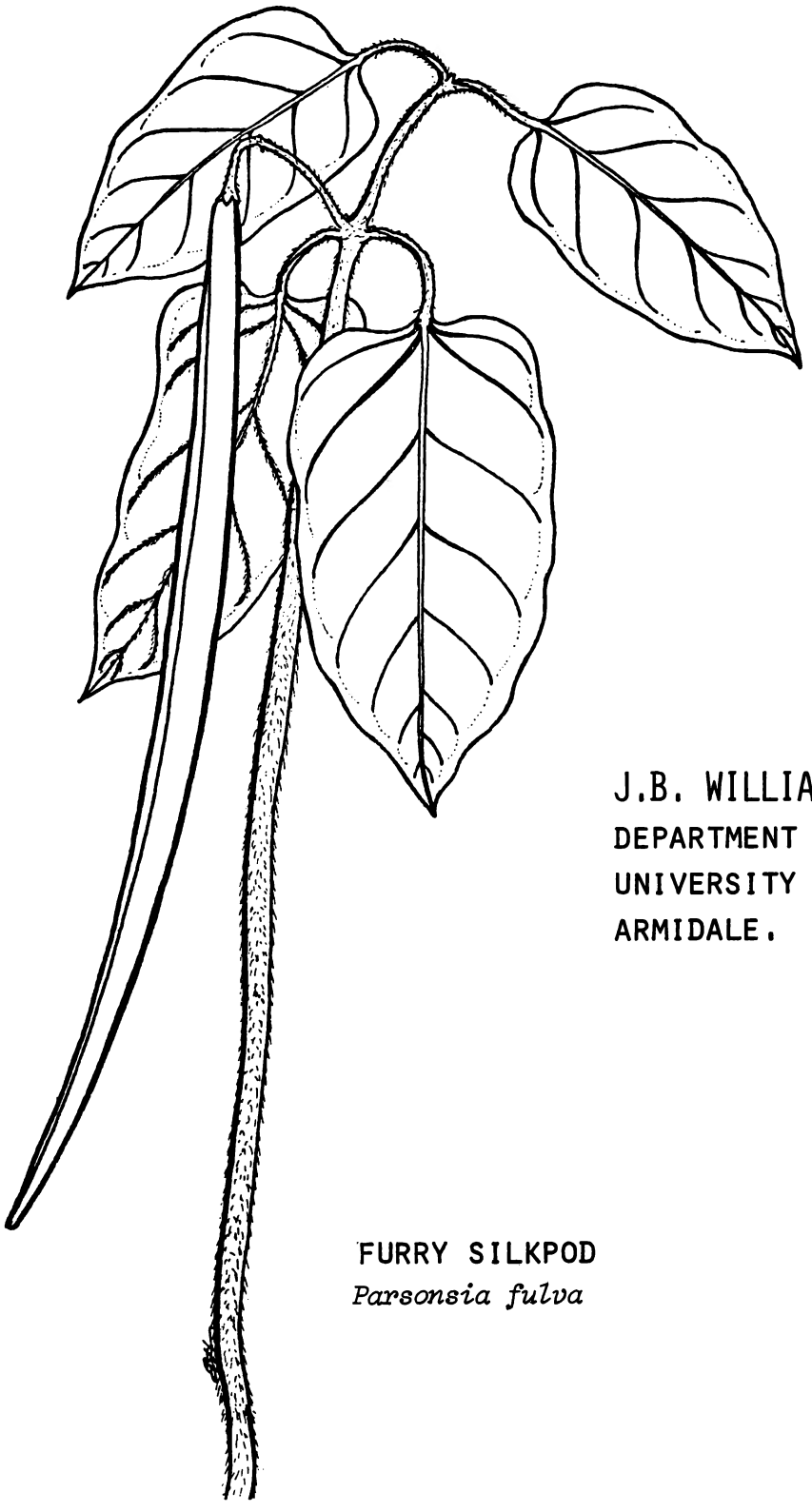
RAINFOREST CLIMBING PLANTS

A FIELD GUIDE TO THE RAINFOREST CLIMBING PLANTS
OF NEW SOUTH WALES USING VEGETATIVE CHARACTERS.



FURRY SILKPOD
Parsonsia fulva

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INTRODUCTION

Rainforests are characterised by numerous plants of special growth forms which take advantage of the favourable conditions of soil, moisture and shelter to fill much of the space within the forest. The climbing plants form one of the most conspicuous and interesting groups and in the warmer rainforests they occur in great abundance and variety. In recent Australian work these forests are often classified as Vine Forests. As most climbers are light-loving plants they often reach their best development along a rainforest edge such as on a roadside, or the boundary to cleared farmland or beside a river. Within the forest climbers are prime colonisers of clearings or gaps. The large climbers usually reach the tree canopy by various means and spread their leafy crowns over those of the trees, sometimes binding adjacent trees together. These large climbers such as Pepper Vine and Water Vine are called lianas, and their twisted woody stems, often 10 to 25 centimetres in diameter usually hang in loops and coils from the tall trees. Their stems if stretched out may be as long as 50 or 60 metres. At the other extreme of size are the small vines such as Slender Cucumber and Forest Bindweed which may be only 2 or 3 metres high.

In this Guide we have attempted an illustrated key to all the species of climbing plants which occur in rainforests in New South Wales. As most of the species extend to southern Queensland the Key should also be useful in that area. The diversity of the climbers is quite impressive. The Key covers 140 species and these are distributed among 81 genera and 51 families. This reflects the tropical affinities of most of these climbers, a common pattern being of a large tropical genus or family with only 1 or 2 species extending south to New South Wales (e.g. *Piper, Pothos*). The largest climber families in number of species are the Asclepiadaceae and Apocynaceae, each with 16 N.S.W. species.

The diversity of genera and families is well reflected in the varied leaf form of the climbers, and also in their range of adaptations for climbing such as tendrils, twining stems, prickles, thorns and climbing roots. These differences render each species distinctive and allow most climbers to be readily identified on stem and leaf features, without the need to check flowers and fruits. Thus the Key uses vegetative features alone, the flowers and fruits being deliberately ignored. This avoids the necessity of searching for flowering shoots, and permits the identification to be done at any time of the year.

USING THE GUIDE

To identify a specimen you will require a typical leafy shoot, a ruler marked in millimetres, and a good lens of about 10 times magnifying power to examine hairs, stipules, glands and domatia. Since the species may show considerable variation, try to obtain a leafy shoot of average form, avoiding

leaves which are clearly aberrant in size or shape due to exposure or to rapid growth. In some species the leaves on very young plants or on coppice shoots differ greatly from normal adult leaves. Some of the commoner juvenile leaf forms are keyed out in the Guide.

A few points should be looked for while examining the living plant in the field. As well as noting growth habit, check the climbing modifications, looking for tendrils, climbing roots and stem-prickles. Also check for stipules, glands, stinging hairs, and examine older stems for any prominent corky outgrowths. Stems and petioles should be checked while fresh for the presence of latex, seen as milky or watery drops of sap oozing from a freshly cut stem or petiole.

The Guide is arranged in the usual form of botanical keys in which a series of questions is asked about the specimen. At each step in the Key two possible answers are provided, only one of which will be correct. These alternatives are marked 1 and *1, 2 and *2 and so on. By working progressively through the Key a specimen may be identified to family and then to species. Two points should be noted: it is essential to read both of the alternatives before deciding which of them applies to your specimen; also if the *1 alternative fits you must pass straight on to the next lead following it and not go back to the lead following after 1. The use of keys is further discussed in the booklet, *How to Identify Plants* (see References, below).

In keying out a specimen first go through pages 4 and 5 to place your plant in one of the 14 Groups. Then turn to the appropriate Group and go through the key provided there. This will lead directly to a family (sometimes to a genus as well) by way of a series of *numbered* leads (1 vs *1, 2 vs *2 etc). In some cases the name of the species will appear directly under the family name and the identification is thus complete. In other cases a separate species key is given following the family. Such a key is in lighter type and its leads are identified by *letters* (A vs *A, B vs *B etc). It is hoped that by arranging the Guide in this way we will give the user a familiarity with the characteristics of at least the main families of climbers.

On reaching a species name, compare your specimen with the drawing provided. Keep in mind that most plants show much variation and thus the drawing is unlikely to be an exact match for your specimen. Variation within species is always a problem with vegetative keys, and applies particularly to leaf size, shape and degree of hairiness. It is likely that occasional specimens will be impossible to key out or will be misidentified. We hope that such cases will be few and that use of the illustrations in conjunction with the text will generally lead to successful identifications. Groups 13 and 14 each contain several species of similar leaf form and more detailed keys are provided in these Groups.

The scales given on the drawings (x$\frac{2}{3}$, x $\frac{1}{2}$ etc) should be taken as a general guide. Where leaf sizes are specified in the text, note that the measurement refers to the leaf blade only, excluding the petiole. An abbreviation used generally in the Guide is Rf for rainforest. The restriction of some species to particular types of rainforest is occasionally noted in the text. These types are Subtropical Rf, Warm-temperate Rf, Cool-temperate Rf, Dry Rf and Littoral Rf. Their characteristics are described in the booklet *How to Identify Plants* referred to below. Since the Guide is intended for practical use in the field, some exotic climbers now naturalized in rainforests are included. These are indicated by an asterisk (*) next to the species name.

The geographic distribution is indicated in a few cases where it is likely to be useful in confirming an identification. In general however this information, together with authorities for species names, is omitted here, since it is readily available in the *Checklist of Rainforest Flora* mentioned below. One climber, *Cissus oblonga* in the *Checklist* is not treated in this Guide. Plants formerly referred to this species have recently been identified as *Cissus antaratica* by Dr. B.R. Jackes, (for N.S.W. plants).

To use this Guide effectively a little basic botanical knowledge of leaf form is needed, and a few terms must be known. These are the terms describing leaf shapes, leaf apices, leaf bases, leaf margins and compound leaves, as well as some special features such as stipules, stipellae, pulvini, domatia and pubescence (hairiness). Most of these are illustrated at various places in the Guide. Fuller explanations may be found in standard botanical glossaries and floras and especially in the booklet *How to Identify Plants*.

REFERENCES AND FURTHER READING

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We thank the Director of the National Herbarium, Sydney for many identifications and for access to collections in the Herbarium. Our thanks also go to Helene Dawson and Jenny Worgan who typed the Key in final form for printing.

John Williams
Gwen Harden
April 1980

KEY TO THE GROUPS

1. Plants without true foliage leaves, either with the leaves reduced to scales or with fleshy scale-like leaves to 5 cm long.

GROUP 1

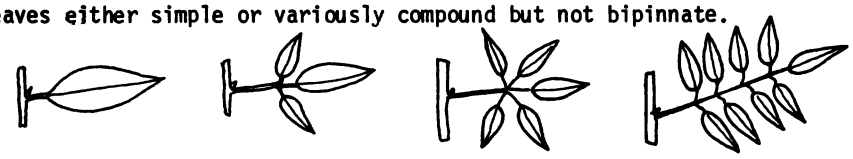
*1. Leaves normally developed.

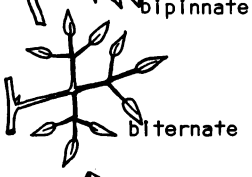
2. Leaves bipinnate.

GROUP 2

bipinnate

*2. Leaves either simple or variously compound but not bipinnate.





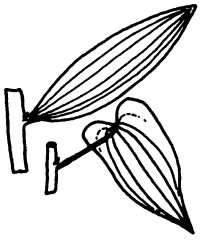
biternate

3. Leaf bases sheathing the stem or at least clasping the stem and almost encircling it.

GROUP 3

*3. Leaf base not sheathing and not clasping the stem for more than half its circumference.

4. Leaves simple and with 3 or more distinct longitudinal veins extending practically to the apex of the lamina.



GROUP 4

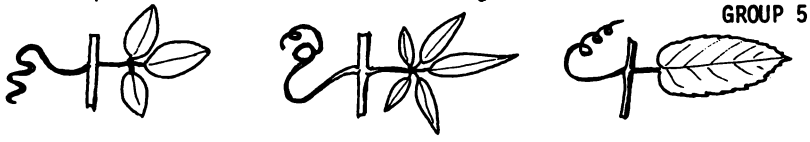
*4. Leaves compound or simple. If leaves simple then pinnately or palmately veined, the basal veins not extending to near the apex of the lamina.

5. Leaves alternate.

6. Plants climbing by specialized leafless tendrils (stems often twining also).

7. Tendrils always produced on the stem opposite a leaf. Either leaves compound with 3-7 lealeafts or leaves simple and then not lobed or triangular.

GROUP 5



*7. Tendrils occurring in the leaf axils or beside the axils, not leaf-opposed. Leaves either simple and lobed or triangular or compound with 9 leaflets.

GROUP 6

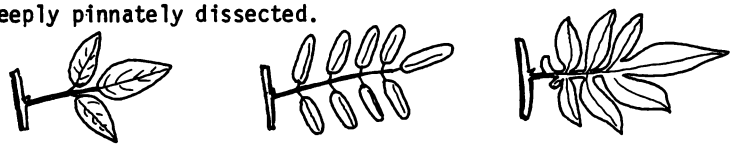
*6. Plants lacking leafless tendrils, climbing with the aid of twining stems or petioles, or spines, or climbing roots.

8. Plants with numerous thorns or prickles or stinging hairs or bristly to rough hairs on stems and petioles.

GROUP 7

*8. Plants lacking thorns, prickles, stinging hairs and bristly to rough hairs. Stems and petioles smooth to the feel, glabrous or hairy.

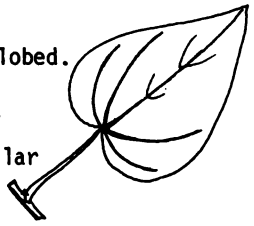
9. Either leaves compound, divided into 3 or more leaflets or deeply pinnately dissected.



GROUP 8

*9. Leaves simple, either unlobed or 2- or 3-lobed or digitately lobed.

10. Leaves palmately veined (3, 5 or more major veins radiating from or near the base). Leaves lobed or hastate or triangular to orbicular. Petiole often more than half as long as the lamina.

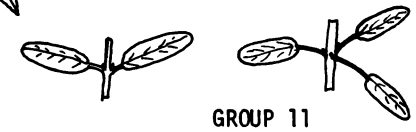


GROUP 9

*10. Leaves pinnately veined, the basal veins not much more prominent than the rest of the lateral veins. Leaves mostly elliptical to oblong-elliptical or triangular. Petiole mostly much less than half the length of the lamina.

GROUP 10

*5. Leaves opposite, or rarely in whorls of 3.



11. Leaves compound, with 3-40 leaflets.

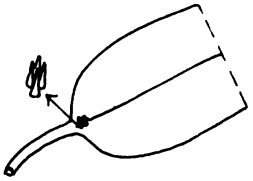
GROUP 11

*11. Leaves simple, or 1-foliolate.

12. No milky or yellowish latex or watery sap exuding from cut stems or petioles.

GROUP 12

*12. Milky or yellowish latex or watery sap exuding from cut stems or petioles.



13. Upper surface of lamina with a cluster of 2-20 minute raised glands at the base (careful examination with lens needed).

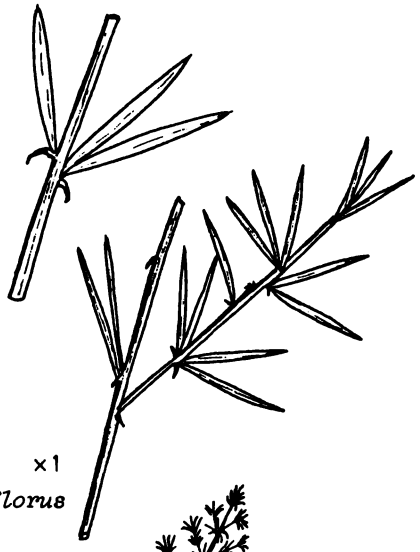
GROUP 13

*13. Upper surface of lamina without any raised glands.

GROUP 14

GROUP 1

PLANTS WITHOUT TRUE FOLIAGE LEAVES, EITHER WITH SCALE LEAVES OR WITH FLESHY SCALE-LIKE LEAVES



1. **Plants with leaves reduced to scales subtending leaf-like linear cladodes. Climbing by twining stems, climbing roots absent.**

LILIACEAE

*(*Asparagus)*

A. Cladodes at least 1 mm wide, 1-2 cm long, single or in clusters of up to eight.

ASPARAGUS VINE **Asparagus densiflorus (A. sprengeri)*

*A. Cladodes less than 1 mm wide, about 5 mm long, spreading, apparently in whorls.

FERNY ASPARAGUS **Asparagus setaceus (A. plumosus)*

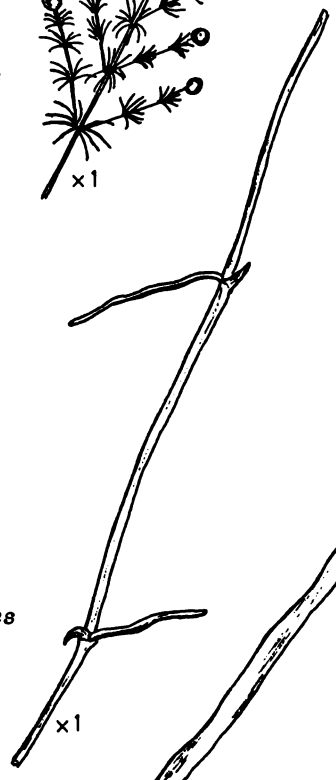
*1. **Plants either with fleshy scale-like leaves or with scale leaves, but not subtending leaf-like linear cladodes. Climbing by adventitious roots.**

ORCHIDACEAE

(Galeola)

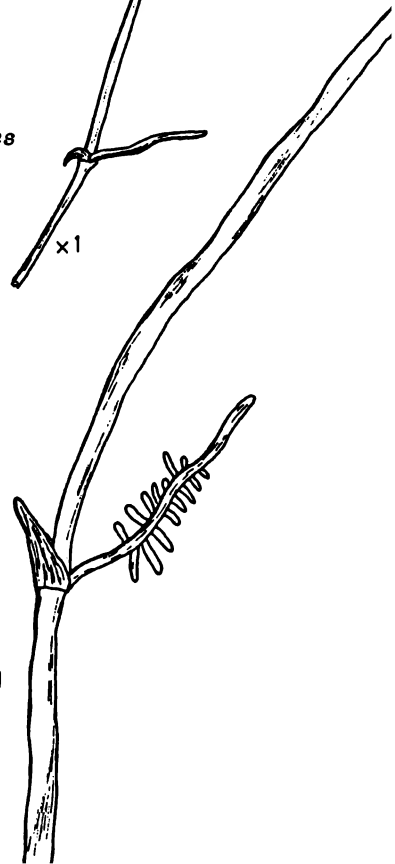
A. Small brown scale leaves present on brownish stems. Climbing roots not branched. Weak climber on Rf margins and in sclerophyll forests.

CLIMBING ORCHID *Galeola cassythoides*



*A. Greenish, fleshy scale-like leaves, to 5 cm long, present on new growth, becoming dry and brown on older greenish stems. Climbing roots branched. Tall climber in Rf.

GIANT CLIMBING ORCHID *Galeola foliata*



NOTE:

CAUSTIC VINE, *Sarcostemma australe* (Asclepiadaceae) has been recorded from dry Rf and vine thickets in the upper Macleay gorges.

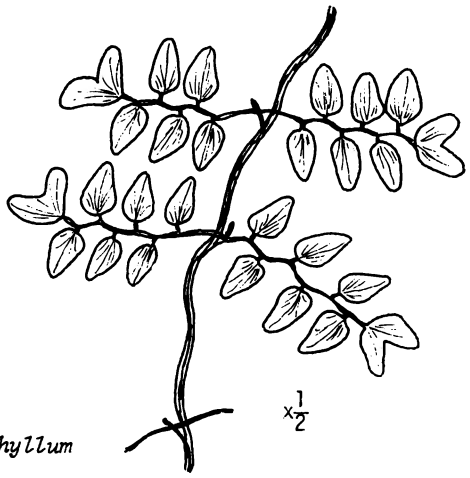
It has long leafless succulent twining stems with milky latex; lacks leaf-like linear cladodes; the minute scale leaves are opposite; climbing roots are absent.

GROUP 2

LEAVES BIPINNATE

See also *Clematis* on page 30.

1. Plants without prickles. Leaves twining, reaching several metres in length and resembling leafy shoots.



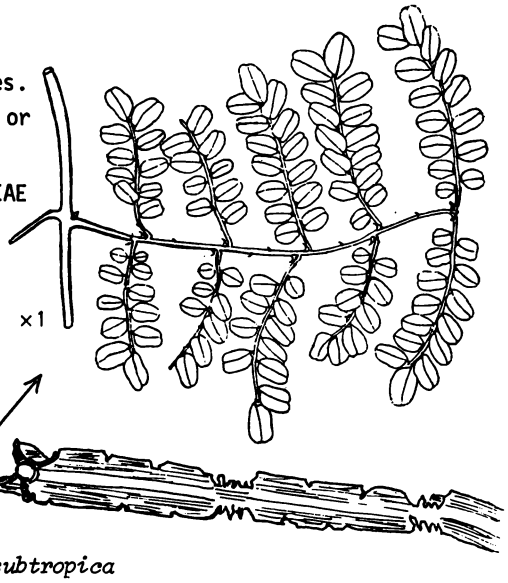
PTERIDOPHYTA

CLIMBING FERN *Lygodium microphyllum*

*1. Leafy shoots and woody stems with numerous reflexed prickles. Leaves 5 to 40 cm long. Leaflets often finely hairy on one or both surfaces.

CAESALPINIACEAE

(Caesalpinia)

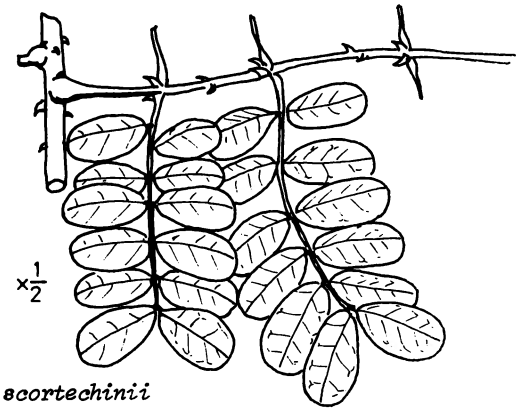


A. Older stems with prominent, wide longitudinal flanges of cork. Leaflets 4 to 12 mm long. Tall woody climber, in dry and subtropical Rf north from Grafton.

CORKY PRICKLE-VINE *Caesalpinia subtropica*

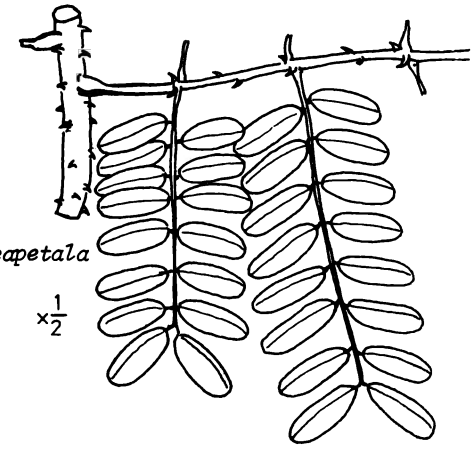
*A. Stems cylindrical, without corky flanges.

B. Leaflets 15 to 25 mm long, obovate. Main lateral veins mostly distinct and slightly raised below. Woody climber, sometimes tall, in subtropical and dry Rf north from Lismore.



LARGE PRICKLE-VINE *Caesalpinia scortechinii*

*B. Leaflets 7 to 17 mm long, oblong. Main lateral veins not distinct or raised. Bushy or scrambling shrub mostly on roadsides and in cleared Rf.



THORNY POINCIANA **Caesalpinia decapetala*

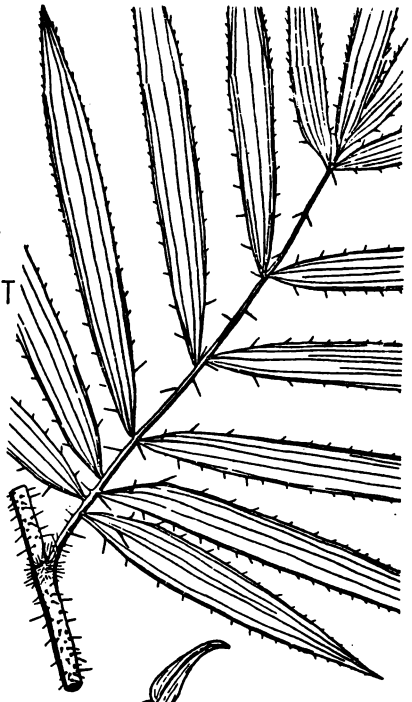
GROUP 3

LEAF BASES SHEATHING THE STEM OR AT LEAST CLASPING THE STEM AND ALMOST ENCIRCLING IT

1. **Leaves pinnate. All parts of the leafy shoot with numerous prickles. Leaves large, often more than 50 cm long.**

ARECACEAE (PALMAE)

LAWYER VINE — *Calamus muelleri*



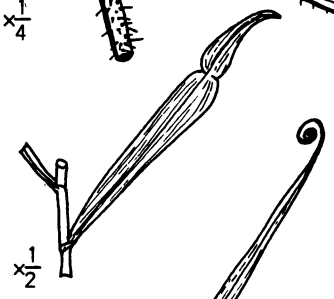
*1. **Leaves simple. Plants without prickles.**

2. **Leaves with several parallel veins.**

3. **Leaves with a constriction near the middle.**

ARACEAE

POTHOS — *Pothos longipes*

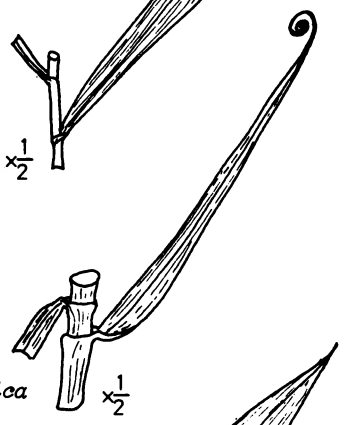


*3. **Leaves without a constriction near the middle.**

4. **Leaf-tips drawn out into narrow, coiled tendrils. Leaf margins entire. Climbing roots absent. Widespread.**

FLAGELLARIACEAE

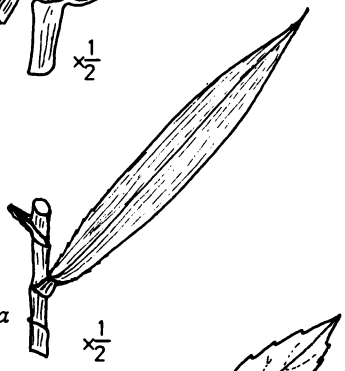
WHIP VINE — *Flagellaria indica*



*4. **Leaf-tips not drawn out into tendrils. Leaf margins with small spinescent teeth near the base. Plants climbing by adventitious roots. Tweed River only.**

PANDANACEAE

FREYCINETIA — *Freycinetia excelsa*



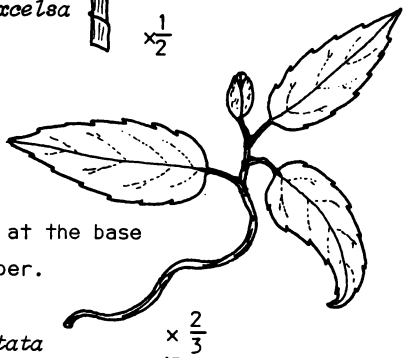
*2. **Leaves with one main vein only (the midvein).**

DILLENIACEAE

(Hibbertia)

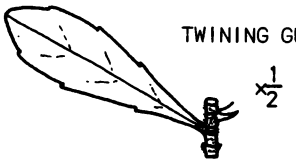
A. Leaves coarsely toothed, elliptical, shortly narrowed at the base into a petiole 1 cm long. Trailing plant or low climber.

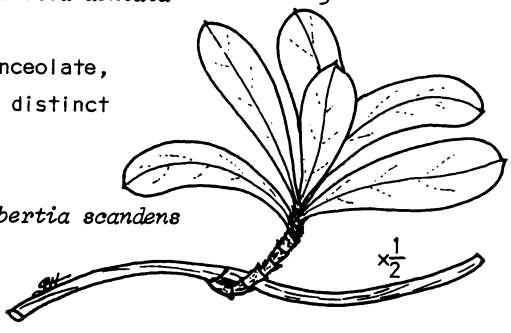
TRAILING GUINEA FLOWER — *Hibbertia dentata*



*A. Leaves very shortly toothed or entire, oblanceolate, gradually narrowed at the base, without any distinct petiole. Stem twiner, sometimes tall.

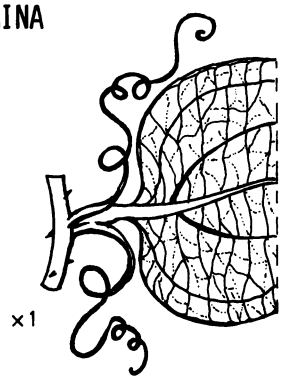
TWINING GUINEA FLOWER — *Hibbertia scandens*





GROUP 4

LEAVES SIMPLE AND WITH 3 OR MORE DISTINCT LONGITUDINAL VEINS EXTENDING PRACTICALLY TO THE APEX OF THE LAMINA

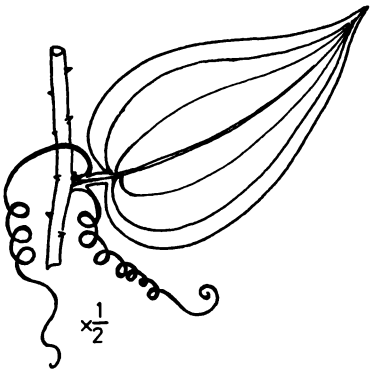


1. Tendrils present but not always at every node.

   2. Paired tendrils (modified stipules) present at the base of many leaves. Leaves with 3 or 5 main longitudinal veins, the finer reticulate venation prominent. Prickles on stem present or absent.

SMILACACEAE

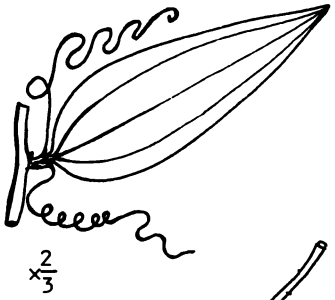
(Smilax)



   A. Prickles present on stems. Leaves with 5 longitudinal veins, green on both surfaces.

AUSTRAL SARSAPARILLA *Smilax australis*

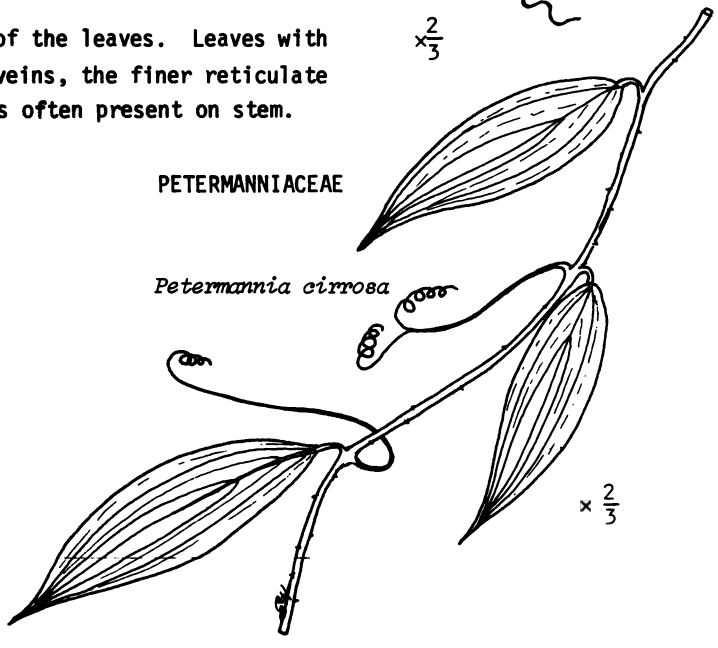
   *A. Prickles absent. Leaves with 3 longitudinal veins, green above, ashy-grey below.



SWEET SARSAPARILLA *Smilax glyciphylla*

*2. Tendrils borne singly opposite some of the leaves. Leaves with several closely spaced longitudinal veins, the finer reticulate venation not obvious. Small prickles often present on stem.

PETERMANNIACEAE

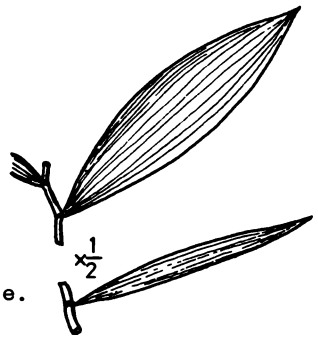


PETERMANNIA *Petermannia cirrosa*

*1. Tendrils absent.

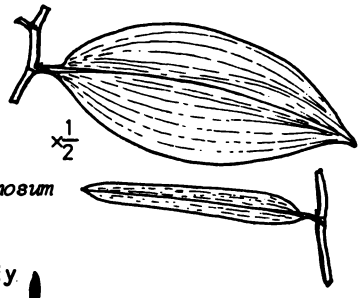
3. **Leaves with several closely spaced longitudinal veins, the finer venation not obvious.**

PHILESIACEAE



A. Leaves dull above, without any distinct midvein. Leaf blades tapering shortly to a twisted leaf-base without a distinct petiole. Leaf shape variable.

WOMBAT BERRY *Eustrephus latifolius*



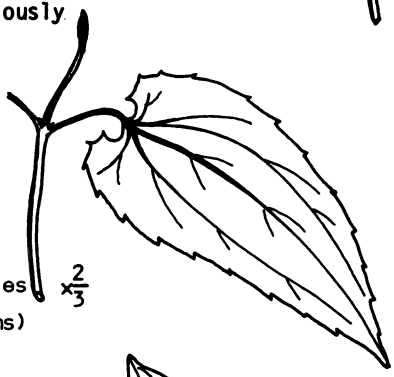
*A. Leaves glossy above with a distinct midvein. A short but definite petiole present. Leaf shape variable.

SCRAMBLING LILY *Geitonoplesium cymosum*

*3. **Leaves with 3-5 major longitudinal veins, the finer venation obviously reticulate.**

4. **Leaves toothed. Central part of leaf paler green. (It is difficult to distinguish species in the juvenile forms. See GROUP 11).**

RANUNCULACEAE

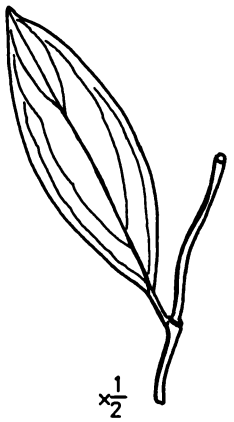


Clematis species (juvenile forms)

*4. **Leaf margins entire. Leaves not variegated.**

5. **Stipules present on youngest stems and leaving an annular scar at each node on older stems. Plants climbing by means of numerous small adventitious roots.**

PIPERACEAE

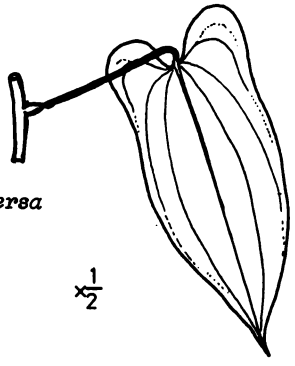


GIANT PEPPER VINE *Piper novae-hollandiae* (exposed sun leaves)

*5. **Stipules not present. Plants without climbing roots.**

6. **Leaves hastate-cordate, glabrous. Petioles slender and fairly long, with a swelling near the apex. Main stems not prickly.**

DIOSCOREACEAE



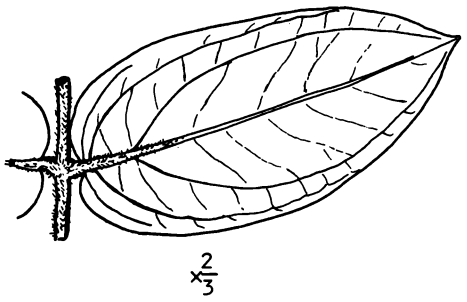
NATIVE YAM *Dioscorea transversa*

***6. Leaves elliptical or oblong or ovate, sometimes cordate but not hastate, glabrous or hairy. Petioles stout, rather short, and sometimes twisted. Main stems mostly prickly.**

SMILACACEAE

(Ripogonum)

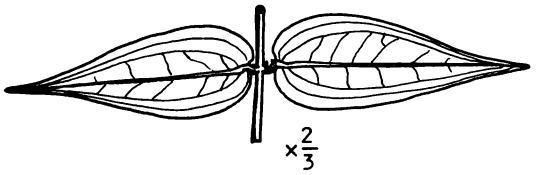
A. Mature branchlets, petioles and sometimes the leaf veins pubescent. Leaves rounded or cordate at the base, petiole short or absent.



B. Petioles very thickly rusty-pubescent on the undersurface. Young expanding shoots densely rusty-woolly. Leaves 5 to 18 cm long, 3 to 8 cm broad. Young branchlets unarmed, older branches prickly.

HAIRY SUPPLEJACK *Ripogonum elseyanum*

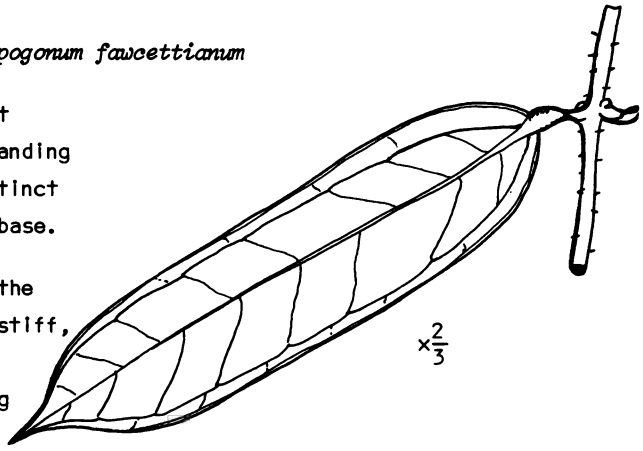
*B. Petioles with a short, sparse to mid-dense covering of pale or brown hairs. Young expanding shoots shortly pubescent with pale yellow hairs. Leaves 5 to 9 cm long, 1 to 3½ cm broad. Branchlets often sparsely prickly.



SMALL SUPPLEJACK *Ripogonum fawcettianum*

*A. Mature branchlets and leaves glabrous, but sometimes the axillary buds and young expanding shoots hairy. Lamina tapering into a distinct petiole, never rounded or cordate at the base.

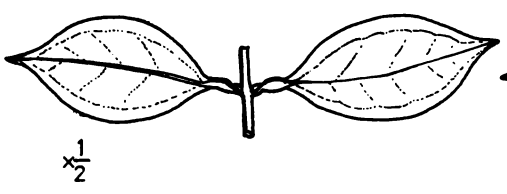
C. Leaves oblong, slightly yellowish on the undersurface, usually very thick and stiff, usually in pairs. Branchlets usually prickly. Leaves 3 to 6 times as long as broad.



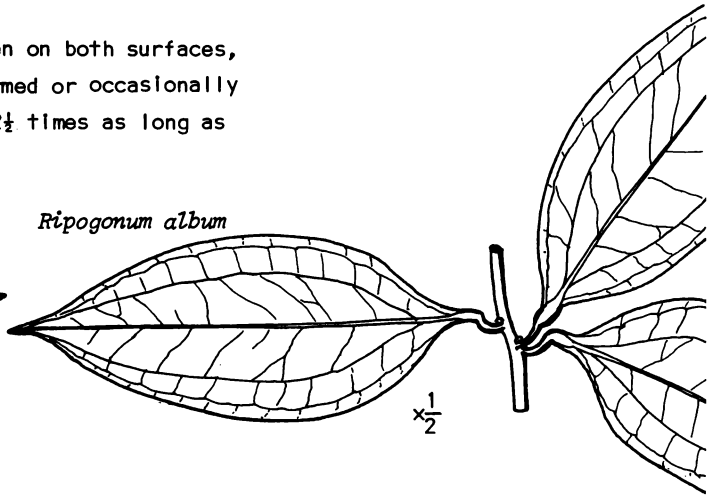
PRICKLY SUPPLEJACK *Ripogonum discolor*

*C. Leaves ovate to elliptical, green on both surfaces, often in threes. Branchlets unarmed or occasionally slightly prickly. Leaves 2 to 2½ times as long as broad.

WHITE SUPPLEJACK *Ripogonum album*



small leaved form



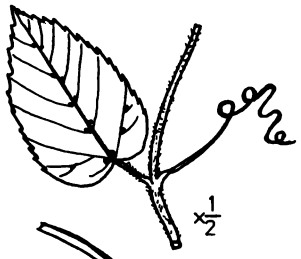
GROUP 5

LEAVES ALTERNATE, SIMPLE OR COMPOUND, WITH TENDRILS PRODUCED OPPOSITE A LEAF.

All members of this Group are in the family VITACEAE (VITIDACEAE)

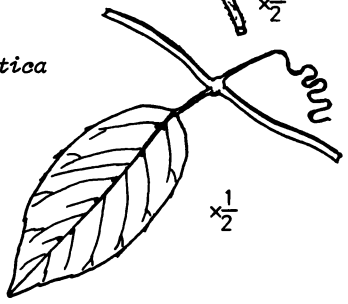
A. Leaves simple. Margins prominently serrate to almost entire. Obvious domatia present on the undersurface.

WATER VINE *Cissus antarctica*



*A. Leaves compound with 3-7 leaflets.

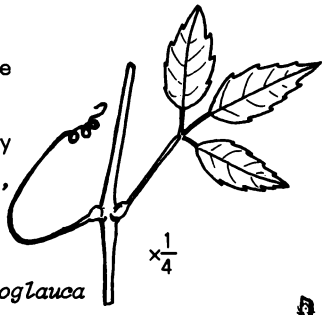
B. Leaves with 3 leaflets.



C. Young shoots hairy. Base of leaflets rounded, cordate or broadly cuneate (wedge-shaped).

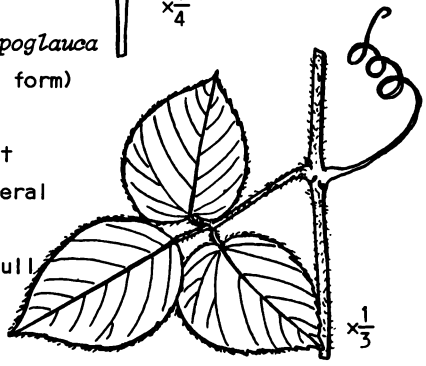
D. Leaflets with a few teeth (8 or fewer on each side of the midrib), each tooth extended into a stiff point. All leaflets broadly cuneate to moderately rounded at the base, elliptical to narrow-obovate, glossy above.

FIVE-LEAF WATER VINE *Cissus hypoglauca* (juvenile form)



*D. Leaflets with very numerous shallow, rather blunt teeth (over 15 on each side of the midrib). Lateral leaflets cordate to very broadly rounded at the base, broadly ovate to round in outline, rather dull above, and softly hairy.

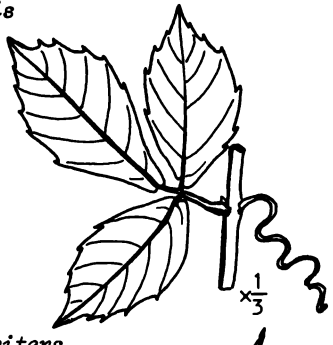
HAIRY WATER VINE *Cayratia acris*



*C. All parts of the shoot glabrous. Leaflets gradually narrowed to the base (cuneate or narrow-cuneate at the base).

E. Leaflets 8-16 cm long, with regular distant teeth; green on both surfaces. A tall climber.

THREE-LEAF WATER VINE *Tetrastigma nitens*



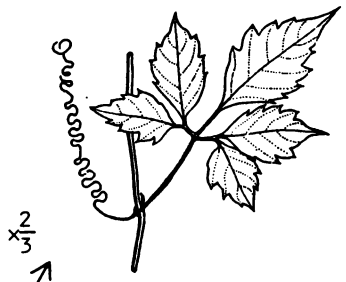
*E. Leaflets 1-6 cm long, entire, or with a few irregular teeth; pale green or purplish below. A weak climber in dry Rf. (This species usually has leaves with 4-7 leaflets.)

SMALL-LEAF WATER VINE *Cissus opaca*

*B. Leaves with 4-7 leaflets.

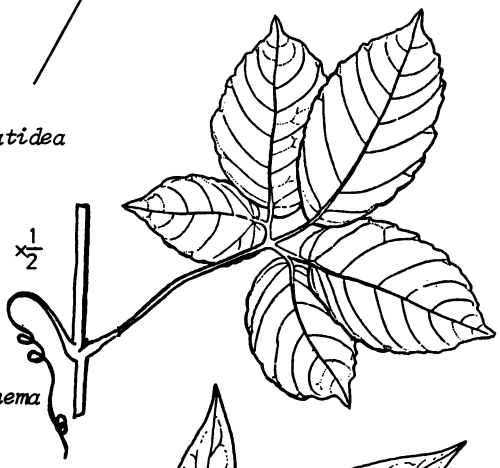
F. Leaves pedately compound, i.e. the leaf divided into 3 segments and the 2 lateral segments each divided into 2 leaflets.

G. Leaflets deeply and acutely toothed, narrowed to the petiolule, usually rather small, 2-6 cm long, thin and soft. Stipules linear. Weak climber on Rf margins.



SLENDER GRAPE *Cayratia clematidea*

*G. Leaflets shallowly and bluntly toothed, rounded at the base, large, 5-15 cm long, somewhat fleshy, soft or quite firm. Stipules broad. Large robust climber in dense Rf.



SOFT WATER VINE *Cayratia eurynema*

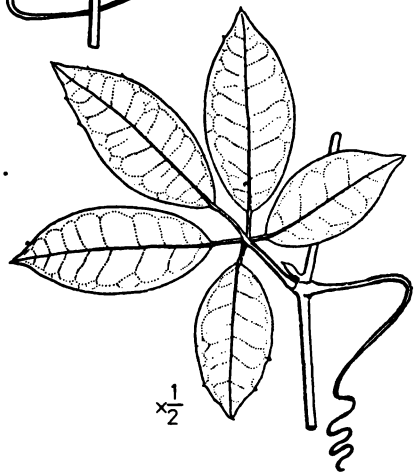
*F. Leaves digitate (all petiolules radiating from a single point at apex of main petiole).

H. Domatia present, leaflets green on both surfaces. Leaflets 6 to 16 cm long. Common large climber.

LONG-LEAF WATER VINE *Cissus sterculifolia*

*H. Domatia absent, leaflets pale green to ashy grey below (sometimes purplish on juvenile shoots).

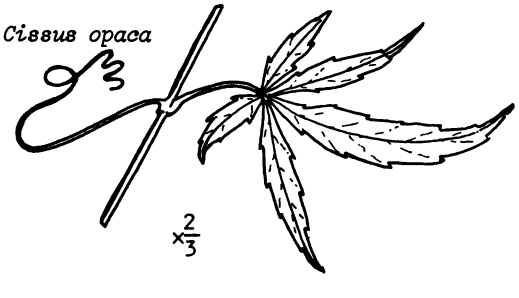
I. Leaflets 5-10 cm long, rounded at the base, borne on distinct petiolules, pale green to ashy grey on undersurface. Young shoots rusty-hairy. Common large climber.

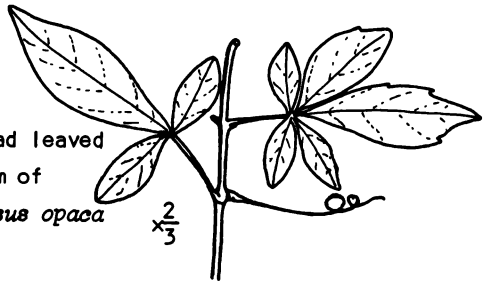


FIVE-LEAF WATER VINE *Cissus hypoglauca*

*I. Leaflets 1-6 cm long, gradually tapering into short petiolules, or sessile, pale green to purplish on undersurface. Young shoots glabrous. Weak, small climber in dry Rf.

SMALL-LEAF WATER VINE *Cissus opaca*

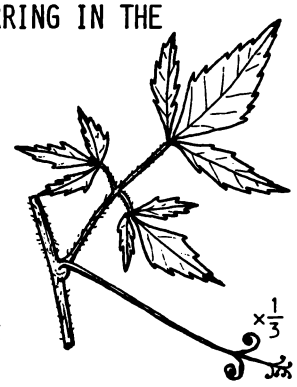




GROUP 6

LEAVES ALTERNATE WITH LEAFLESS TENDRILS OCCURRING IN THE LEAF AXILS OR BESIDE THE AXILS

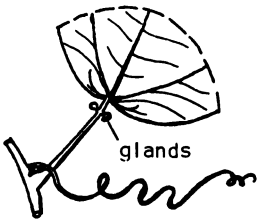
1. Leaves compound with 9 leaflets. Tendrils forming part of the inflorescence which is borne on an elongated peduncle in the leaf axil. Fruit an inflated, papery capsule.



SAPINDACEAE

BALLOON VINE *Cardiospermum halicacabum*

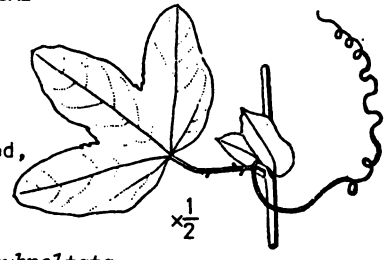
*1. Leaves simple, lobed or if unlobed triangular in outline. Tendrils not associated with the inflorescence.



2. Tendrils unbranched, strictly axillary. Leaves 3-lobed (rarely 5-lobed or unlobed) neither rough to the touch nor velvety-hairy. One to several raised glands often present on the petiole. Tendrils without a thickened, straight basal segment.

PASSIFLORACEAE

A. Plants glabrous.

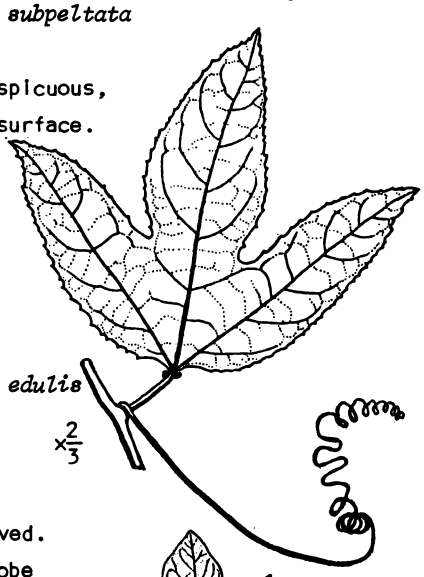


B. Stipules broad and leafy, 1-3 cm long. Leaves very pale on the undersurface. Petioles with 1-3 scattered, elongated glands. Widespread and very common.

WHITE PASSIONFLOWER *Passiflora subpeltata*

*B. Stipules narrow, up to 1 cm long, but usually inconspicuous, or absent. Leaves mid- to light-green on the undersurface.

C. Margin of leaf regularly toothed. Petiole with 2 prominent, raised glands. Some leaves unlobed. Frequent in regrowth and on Rf margins from the Illawarra northward.



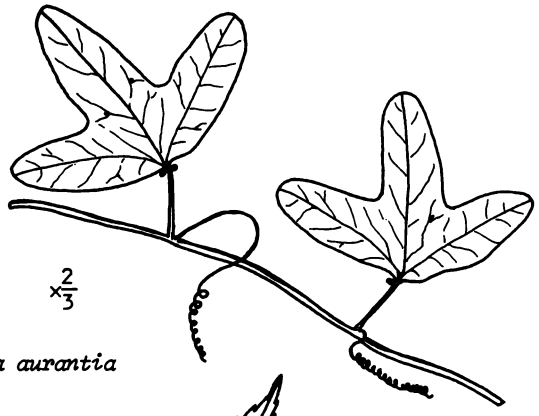
PASSIONFRUIT *Passiflora edulis*

*C. Margin of leaf entire, or almost so.

D. Stipules linear, 2 to 8 mm long, generally curved. Lobes of leaf blade usually pointed, central lobe widest above its base. Glands absent from petiole. Mainly in the south, from Victoria to Pittwater, but also found at Ebor Falls.

RED PASSIONFLOWER *Passiflora cinnabarina*

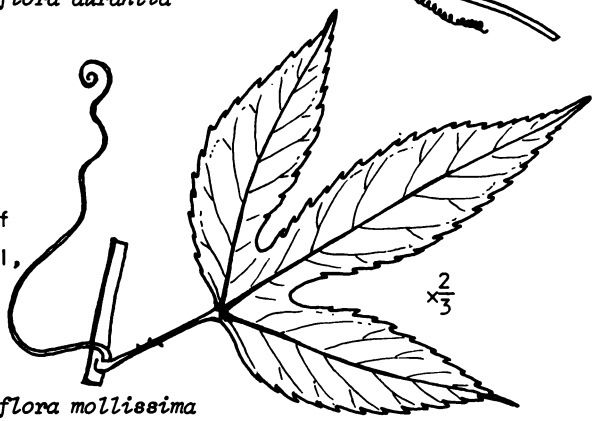
*D. Stipules absent or about 1 mm long. Lobes of leaf blade rounded, central lobe widest at its base. Two raised glands present on the petiole near the top. In warm Rf north from Ballina.



BLUNT-LEAVED PASSIONFRUIT *Passiflora aurantia*

*A. Hairs present, at least on young stems, petioles and one leaf surface (lens needed).

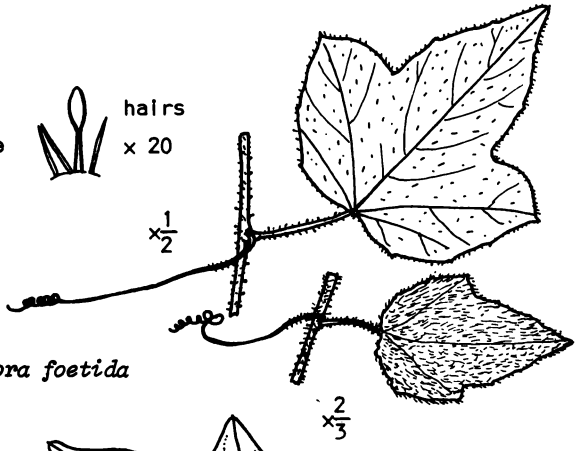
E. Margin of leaf regularly toothed, the teeth numerous. Stems, petioles and undersurface of leaf finely hairy. Petiole with several small, often inconspicuous glands. In warm Rf and regrowth north from Taree, but not common.



BANANA PASSIONFLOWER **Passiflora mollissima*

*E. Margin of leaf entire or sometimes with a few small irregular teeth.

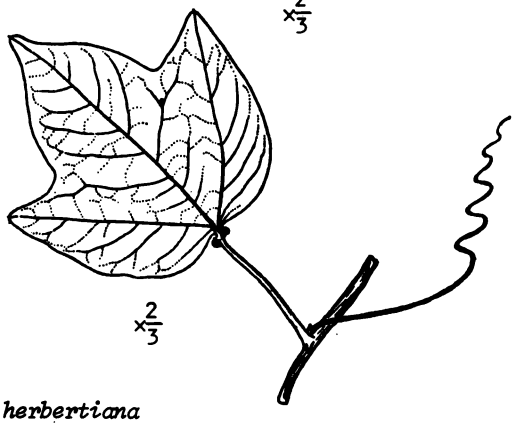
F. Petiole without glands. Glandular and simple hairs present on stems, petioles and both leaf surfaces (usually distinctly hairy). Leaves with an unpleasant odour. In warm Rf and regrowth north from the Richmond River.



FOETID PASSIONFRUIT **Passiflora foetida*

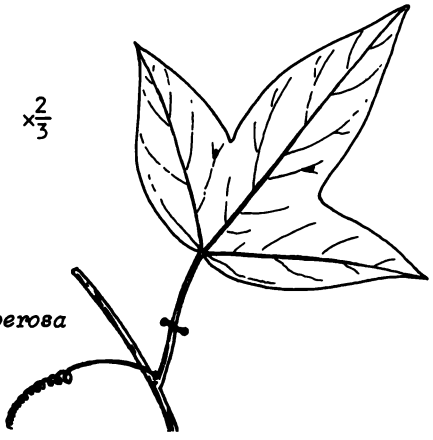
*F. Petiole with 2 raised glands. Glandular hairs absent, simple hairs present on petioles and one or both leaf surfaces.

G. Raised glands near the top of the petiole. Lobes of leaf broad and shallow. Stems, petioles and undersurface of leaves finely hairy, sometimes sparsely so. Frequent in Rf north from Narooma.



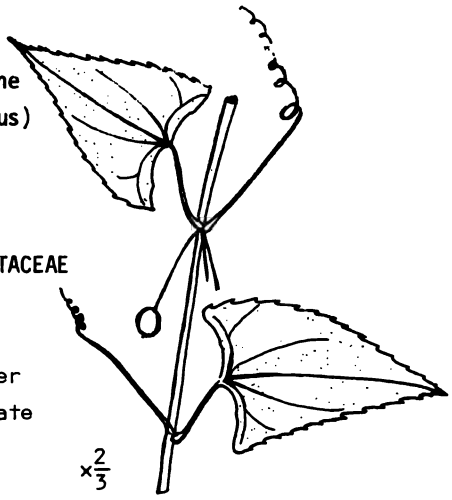
NATIVE PASSIONFRUIT *Passiflora herbertiana*

*G. Raised glands half way along the petiole. Leaves rather deeply lobed. Young stems, petioles and both leaf surfaces usually with scattered hairs, often sparse except on margins. In regrowth and disturbed Rf in warmer areas, not common.



SMALL PASSIONFRUIT **Passiflora suberosa*

*2. **Tendrils usually branched, sometimes simple, often beside the leaf axils. Leaves either quite rough to the touch (scabrous) or velvety hairy below. Glands absent from the petioles. Tendrils with a thickened, straight basal segment.**

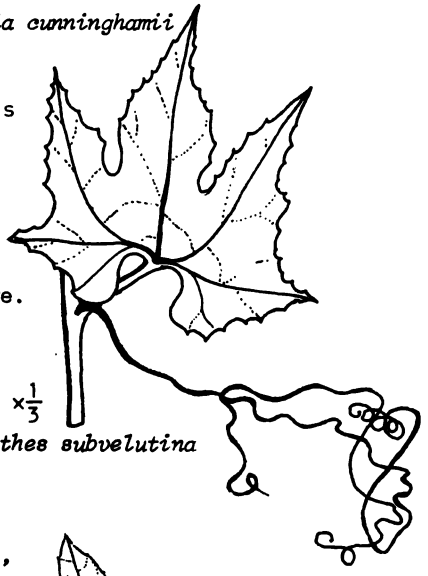


CUCURBITACEAE

A. Leaves triangular, unlobed, scabrous on the upper surface. Tendrils unbranched. A slender delicate climber with thin-textured leaves.

SLENDER CUCUMBER *Zehneria cunninghamii*

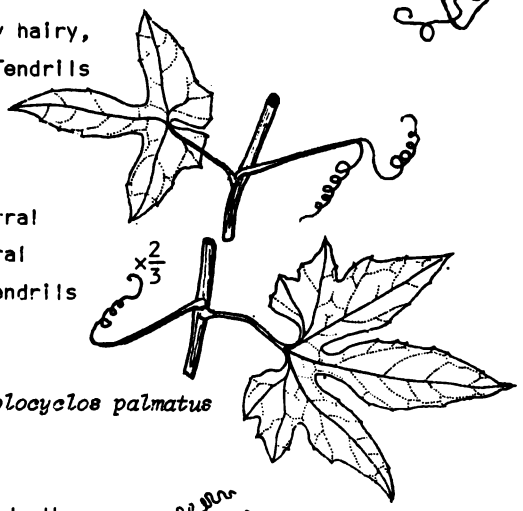
*A. Leaves with 3-7 shallow or deep lobes. Tendrils mostly branched.



B. Leaves densely pubescent to velvety on the undersurface, and scabrous to pubescent above. Leaves large, up to 20 cm long, Tendrils with 3-5 branches.

SILKY CUCUMBER *Trichosanthes subvelutina*

*B. Leaves scabrous and sometimes slightly hairy, never densely pubescent or velvety. Tendrils with 2 or 3 branches, or occasionally unbranched.



C. Leaves very deeply 3-lobed, the central lobe narrowed at the base, the lateral lobes often again 2- or 3-lobed. Tendrils 2-branched or unbranched.

NATIVE BRYONY *Diplocyclos palmatus*

*C. Leaves mostly shallowly 3- to 5-lobed, the central lobe broadest at the base. Tendrils 2- or 3-branched. Leaves thin-textured.

STAR CUCUMBER *Sicyos angulata*

GROUP 7

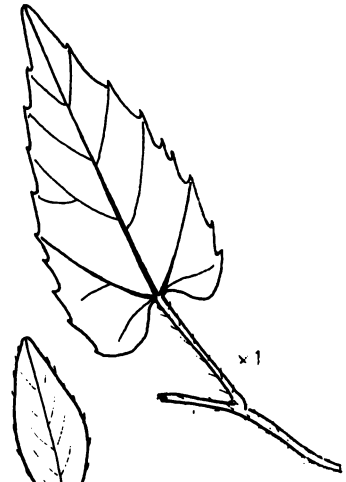
LEAVES ALTERNATE, SIMPLE OR COMPOUND. PLANTS WITH NUMEROUS THORNS OR PRICKLES OR STINGING HAIRS OR BRISTLY TO ROUGH HAIRS ON STEMS & PETIOLES.

1. Plants with stinging or bristly hairs on stems and petioles, lacking thorns and prickles.

2. Leaves simple. Stems and petioles with scattered hairs which sting on contacting the skin. Stipules present, small.

EUPHORBIACEAE

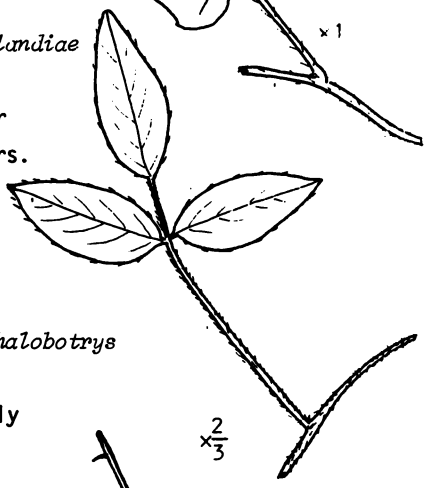
STINGING VINE *Tragia novae-hollandiae*



*2. Leaves with 3 leaflets (rarely 4 or 5). Stems and petioles rather scabrous (rough to the feel) due to presence of small bristly hairs. Stipules and stipellae absent.

ARALIACEAE

CLIMBING PANAX *Cephalaralia cephalobotrys*

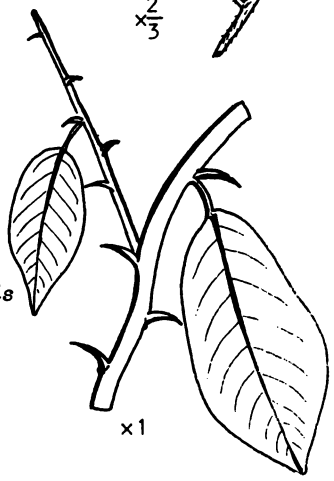


*1. Plants with numerous thorns or prickles, lacking stinging or bristly hairs.

3. Axillary thorns present at some nodes. Prickles absent. Sap often more or less milky. **Large climber**, widespread.

MORACEAE

COCKSPUR THORN *Maclura cochinchinensis*

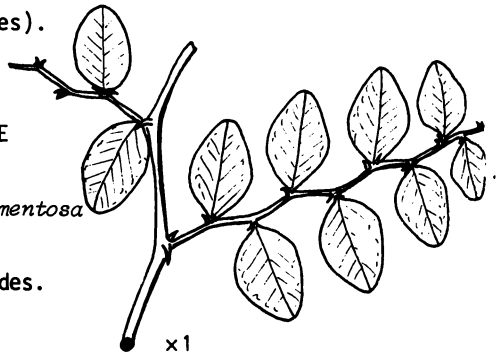


*3. Axillary thorns absent. Prickles present, scattered on stems, on petioles and sometimes on leaf-blades, or in pairs at leaf bases. Milky sap absent.

4. Prickles in pairs at base of each leaf (i.e. modified stipules). Leaves simple, obtuse, less than 2 cm long. Scrambler, in dry Rf in the far north only.

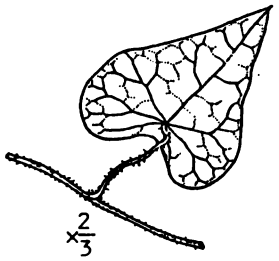
CAPPARIDACEAE

SCRAMBLING CAPER *Capparis sarmentosa*



*4. Prickles scattered on stems, petioles and sometimes leaf blades. Leaves more than 3 cm long.

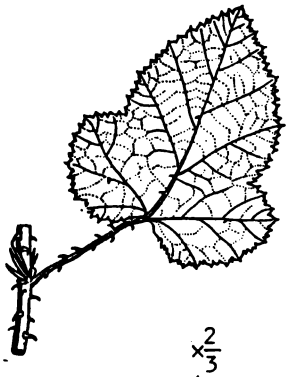
5. Leaf-margins entire. Leaves simple. Petiole inserted a little way in from the edge of the lamina. Prickles very fine.



MENISPERMACEAE

PRICKLY SNAKE VINE *Stephania aculeata*

*5. Margins of leaves or leaflets toothed. Leaves simple or compound. Petiole or petiolule inserted at edge of lamina. Prickles coarse and very obvious.



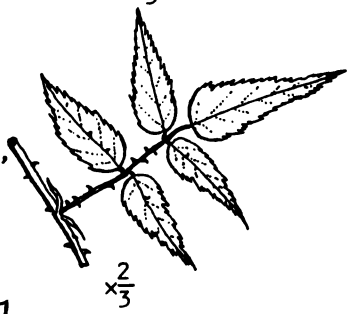
ROSACEAE

(Rubus)

A. Leaves simple, lobed, venation palmate.

MOLUCCA BRAMBLE *Rubus hillii*

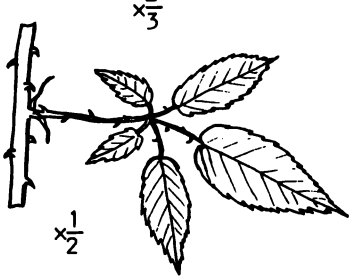
*A. Leaves compound.



B. Leaves pinnate, with 5 or 7 leaflets, shortly stalked, common on margins of rainforests. Weak climber.

ROSE-LEAF BRAMBLE *Rubus rosifolius*

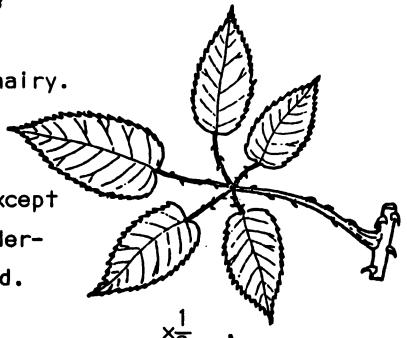
*B. Leaves digitate with 3-5 leaflets.



C. Undersurface of leaflets whitish or grey, usually tomentose. Stems reddish or purple when mature. Scrambling climber on rainforest margins.

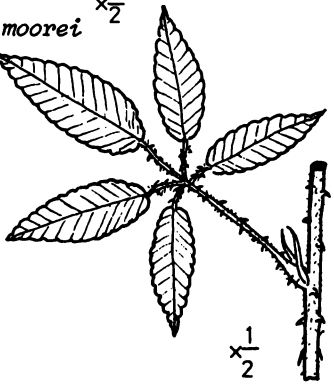
BLACKBERRY **Rubus vulgaris*

*C. Undersurface of leaflets green, glabrous or hairy. Stems green or brownish.



D. Young leaflets and shoots quite glabrous except for sparse, very fine hairs on veins on undersurface. Mature leaves glabrous. Widespread.

GREEN-LEAVED BRAMBLE *Rubus* species aff. *moorei*



*D. Young leaflets and shoots densely covered with fine, silky hairs. Mature leaves hairy below. In STRf north from Lismore.

SILKY BRAMBLE *Rubus moorei*

GROUP 8

LEAVES ALTERNATE, COMPOUND OR PINNATELY DISSECTED

1. **Stipules and stipellae absent. Stalk of terminal leaflet not jointed.**

   2. **Leaves pinnately lobed or pinnate with 1 or more of the leaflets deeply lobed and unlike normal leaflets.**

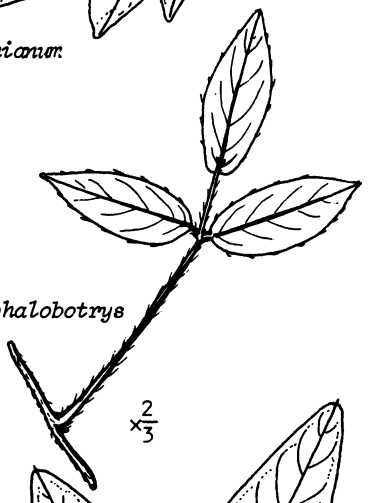
   SOLANACEAE

   CLIMBING NIGHTSHADE **Solanum seaforthianum*

   *2. **Leaves compound with 3 normal, similar leaflets. Rough, bristly hairs usually present on stems and leaves. Leaflets lanceolate or oblong-lanceolate, 2½ to 10 cm long, the margins entire or finely toothed.**

   ARALIACEAE

   CLIMBING PANAX *Cephalaralia cephalobotrys*



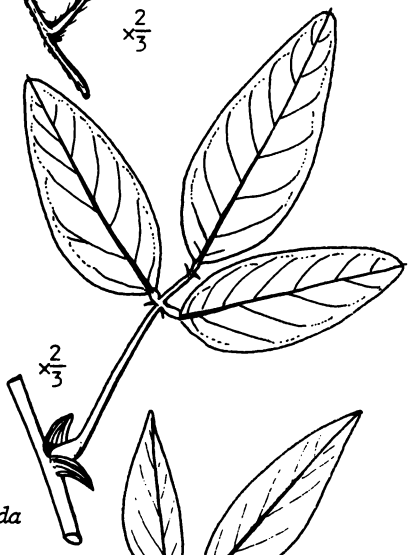
*1. **Stipules and stipellae present and distinct, at least on younger shoots. Stalk of terminal leaflet with a prominent joint near the apex (i.e. this leaflet with a short petiolule articulate on the extended rachis). Leaves 3-foliolate or pinnate.**

PAPILIONACEAE

A. Leaves with 3 leaflets.

B. Stipules triangular or ovate, with 3 to 6 raised longitudinal ribs, persistent, 3 to 6 mm long. Mature leaflets with a sparse to dense covering of appressed, shiny hairs on the undersurface. Leaflets firm, finely reticulate, 4 to 14 cm long. In open forest and on Rf margins, widespread.

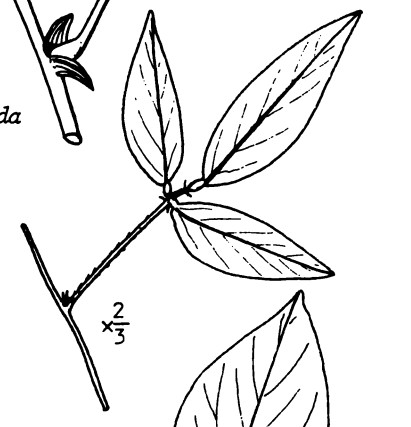
RED CORAL PEA *Kennedia rubicunda*



*B. Stipules narrow to linear, not ribbed, 1 to 3 mm long. Leaflets soft.

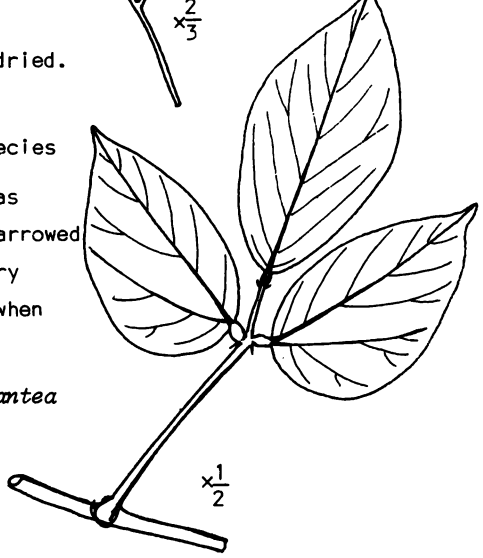
C. Leaflets lanceolate, 3 to 4 times as long as wide, 5 to 8 cm by 1½ to 2½ cm, thin and soft, gradually acuminate to a fine point. Lateral leaflets moderately unequal-sided, leaflets green when dried. Small twiner on Rf margins.

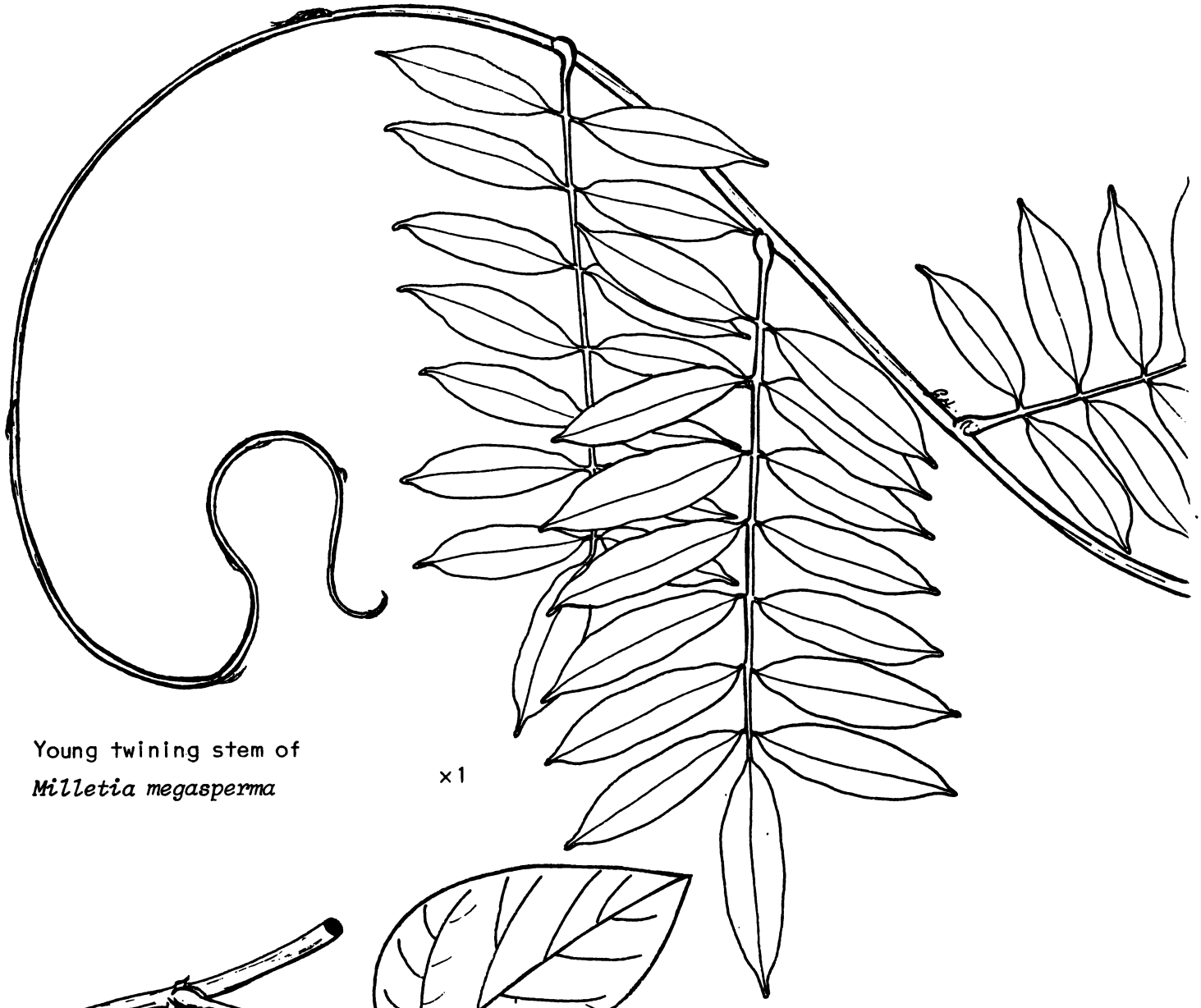
BRUSH GLYCINE *Glycine* species



*C. Leaflets ovate to broad-ovate, 1½ to 2½ times as long as wide, 6 to 15 cm by 3 to 8 cm, soft, narrowed to a fine or blunt point. Lateral leaflets very unequal-sided, leaflets mostly brown to black when dried. Tall climber in littoral Rf and STRf.

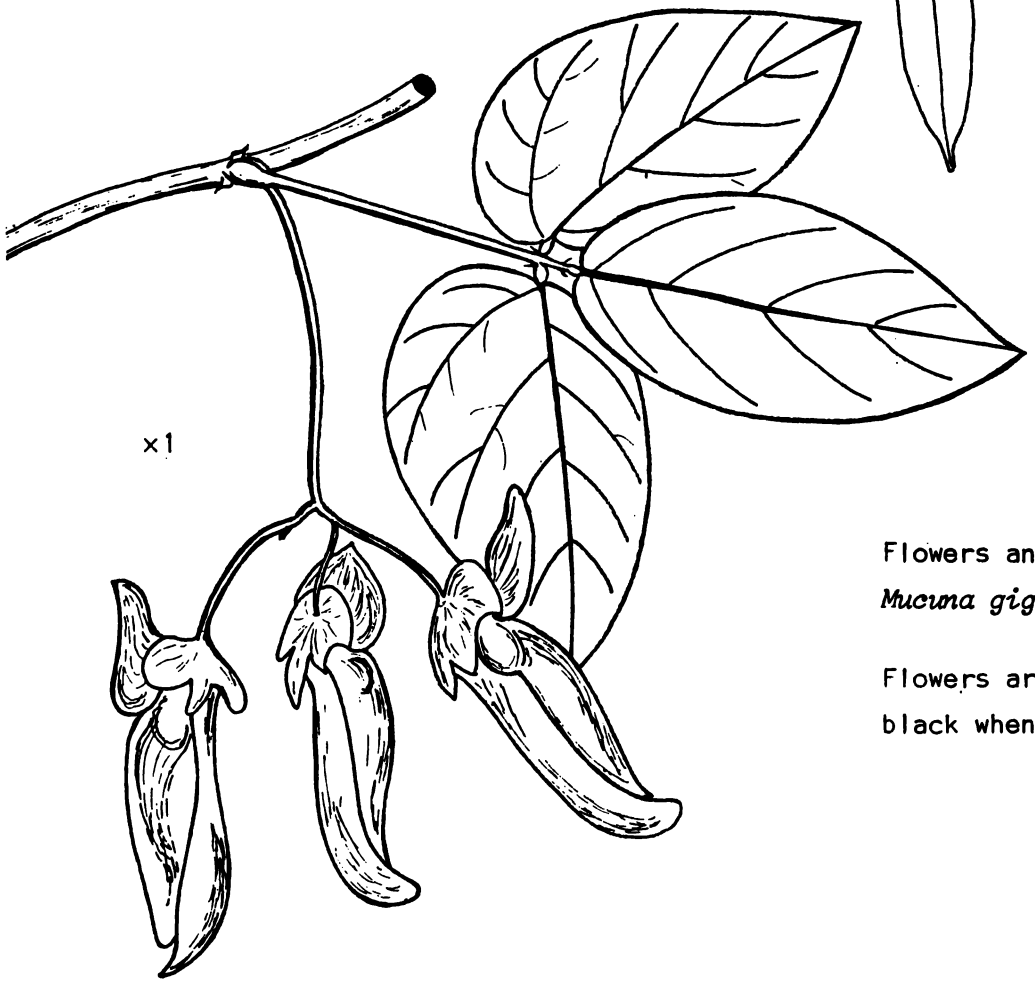
BUSHY BEAN *Mucuna gigantea*





Young twining stem of
Milletia megasperma

×1



×1

Flowers and leaf of
Mucuna gigantea

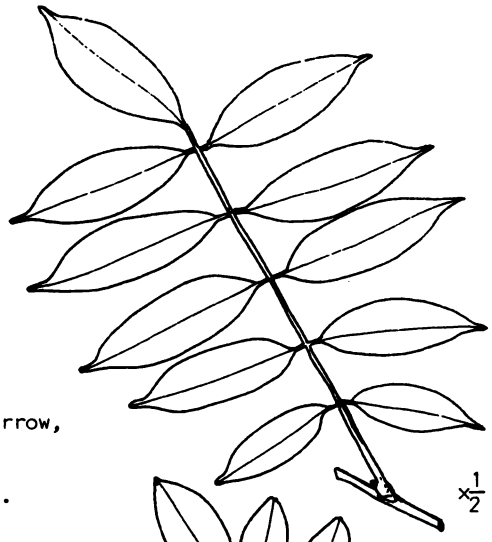
Flowers are green, turning black when dried.

*A. Leaves pinnate, with 7 to 19 leaflets.

D. Mature leaflets hairless or the undersurface sparsely sprinkled with fine hairs. Main lateral veins faint, not conspicuous or forming ribs.

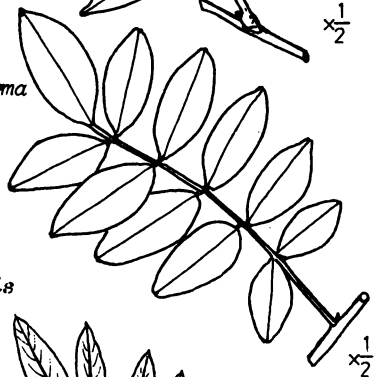
E. Leaflets acuminate, drawn out to a long, narrow, blunt point at the apex. Upper surface of leaflets dull or slightly glossy, mid-green.

NATIVE WISTARIA *Millettia megasperma*



*E. Leaflets blunt or slightly notched at the apex, not acuminate. Upper surface of leaflets glossy, dark green.

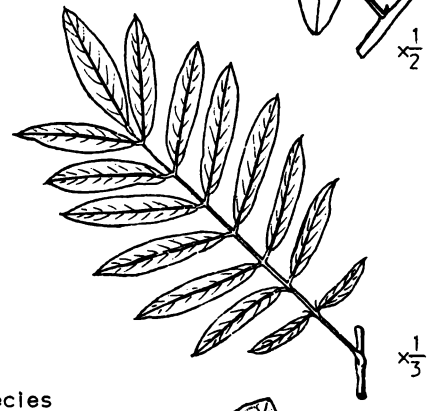
BLUNT WISTARIA *Millettia australis*



*D. Mature leaflets distinctly hairy below. Young shoots often rusty hairy. Main lateral veins conspicuous as ribs on the undersurface of the leaflets.

F. Leaflets narrow-oblong or oblong-lanceolate, 3 to 6 times as long as wide. Woody stems exuding dark red sap after cutting.

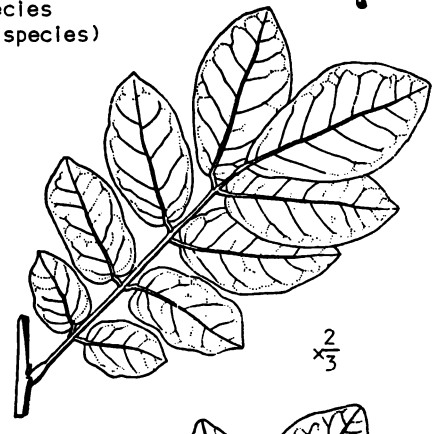
GIANT BLOOD VINE *Kunstleria* species (*Lonchocarpus* species)



*F. Leaflets, broader, ovate to obovate or broad-oblong, mostly 1 to 3 times as long as wide.

G. Leaflets (at least the upper ones) mostly obovate to elliptical i.e. widest at or above the middle, shortly acuminate at the apex to a blunt point. Woody stems exuding dark red sap when cut.

BLOOD VINE *Kunstleria blackii* (*Lonchocarpus blackii*)



*G. Leaflets mostly ovate to elliptical (widest at or below the middle), not acuminate, mostly rounded or scarcely pointed at the apex. Woody stems not exuding red sap when cut.

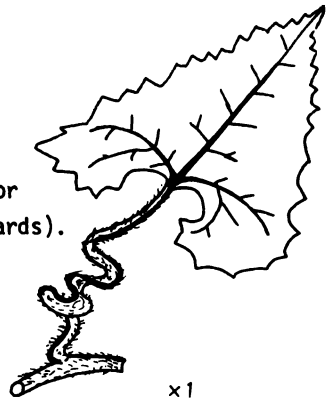
NATIVE DERRIS *Derris involuta*

GROUP 9

LEAVES SIMPLE, ALTERNATE, PALMATELY VEINED

1. Either margins regularly toothed or leaves digitately lobed or 2- or 3-lobed (including sagittate with the 2 basal lobes pointing backwards).

2. Leaves regularly toothed. Petioles of many leaves twining. Shoots and leaves softly and densely hairy.

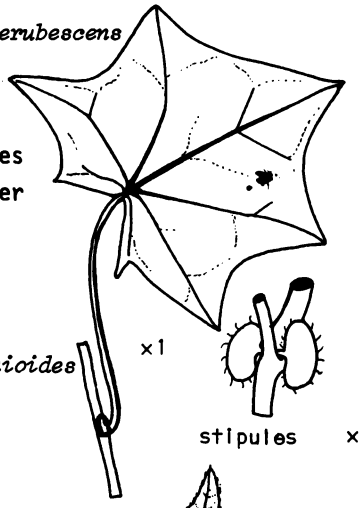


SCROPHULARIACEAE ×1

MAURANDIA *Lophospermum erubescens*

*2. Leaves not regularly toothed, petioles not twining.

3. Leaves shallowly and regularly digitately lobed. Stipules kidney-shaped, 2½ to 3½ mm long, usually fallen from older leaves. No latex present.



COMPOSITAE

CAPE IVY *Senecio mikanioides* ×1

stipules ×3

*3. Leaves deeply digitately lobed, or 2- or 3-lobed or sagittate. Stipules absent. A small amount of milky latex often seen on cutting the stem or petiole.

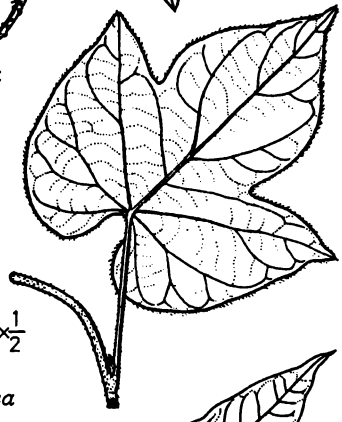
CONVOLVULACEAE

A. Leaves deeply digitately lobed, with 5 to 8 lobes, 3 to 6 cm long, sometimes with scattered hairs on the margins. Widespread and common.

FIVE-LEAF MORNING GLORY *Ipomoea cairica* ×⅔

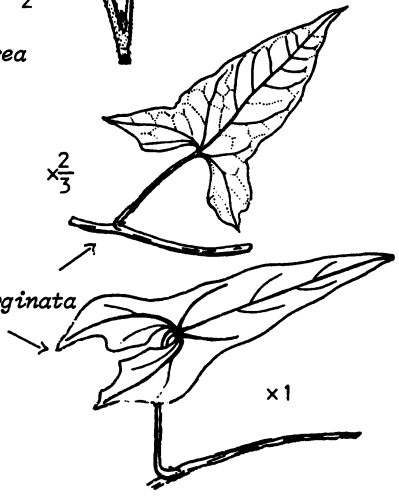
*A. Leaves not digitately lobed, either 2- or 3-lobed.

B. Leaves covered with scattered, soft hairs, 10 to 15 cm long, 2- or 3-lobed (some leaves not lobed). Frequent in regrowth and on R[illegible] margins.



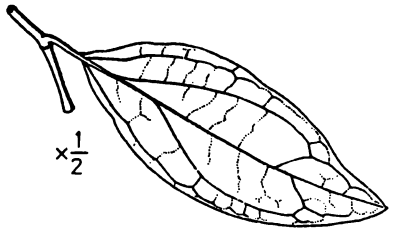
MORNING-GLORY VINE *Ipomoea purpurea* ×½

*B. Leaves glabrous, thin, 3 to 7 cm long, triangular in shape with the 2 basal lobes pointing backwards (sagittate). Herbaceous twiner.



FOREST BINDWEED *Calystegia marginata* ×⅔ ×1

*1. Either margins entire or 1 or 2-angled or slightly lobed. If lobed the lobes at right angles to the leaf (hastate).

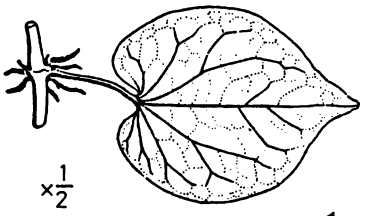


sun leaf

4. Stipules present on youngest stems and leaving an annular scar at each node on older stems. Leaves mostly cordate, soft. Plants climbing by small adventitious roots.

PIPERACEAE

GIANT PEPPER VINE — *Piper novae-hollandiae*

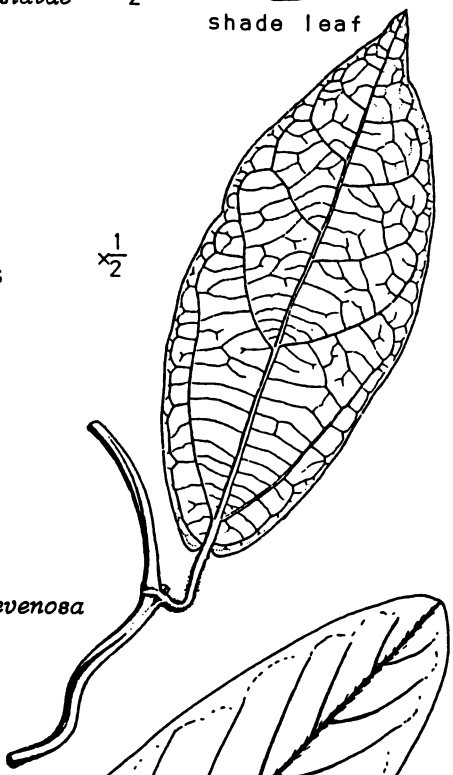


shade leaf

*4. Stipules absent. Plants not climbing by adventitious roots.

5. Plants pubescent, or at least the young shoots and the undersurface of the leaves hairy.

6. Leaves ovate to elliptical to oblong-elliptical. Petioles much less than ½ the length of the lamina, 1 to 3 cm long.



7. Petioles thickened and twisted, without a swelling at the apex. Leaf base expanded into a horizontal ridge extending 3/4 way around the stem. Leaves 10 to 20 cm long, with sparse brown hairs on petioles and veins on the lower surface.

ARISTOLOCHIACEAE

ARISTOLOCHIA — *Aristolochia praevenosa*

*7. Petioles straight and with a distinct pulvinus-like swelling at the apex. No horizontal ridge extending from the leaf base. Leaves 6 to 13 cm long; stems, petioles and veins (especially on the lower surface) softly hairy with fawn spreading hairs.

MENISPERMACEAE

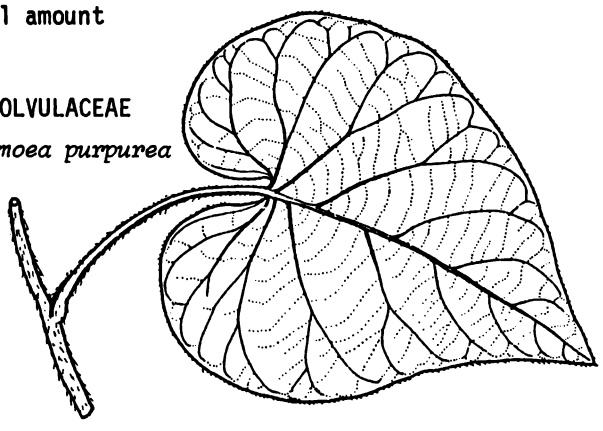
PLEOGYNE — *Pleogyne australis*

*6. Leaves orbicular to orbicular-cordate. Petioles much more than ½ the length of the lamina.

8. Leaves hairy on both surfaces, not much paler below, 6 to 15 cm long; some leaves usually lobed. Leaves finely and softly hairy below, rather sparsely hairy above; stems with reflexed hairs. A small amount of milky latex present.

CONVOLVULACEAE

MORNING-GLORY VINE — **Ipomoea purpurea*

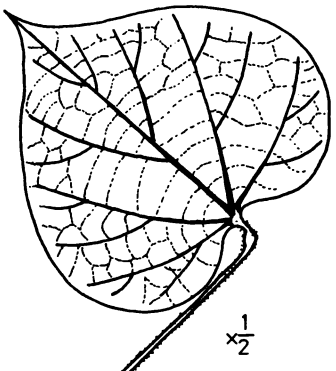


*8. Leaves mostly glabrous and dark green above, hairy and very pale green or ashy-grey below. Latex absent.

MENISPERMACEAE

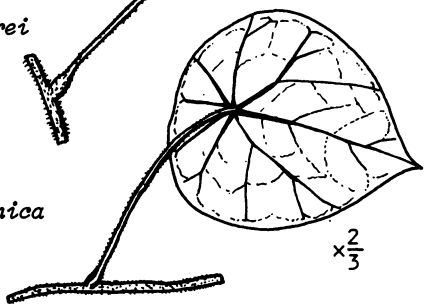
A. Leaves not peltate. Leaves orbicular-cordate to ovate-cordate, often very large, 6 to 15 cm long, petioles 4 to 14 cm long, ashy coloured on undersurface. Tall climber in canopy of Rf.

ROUNDLEAF VINE *Legnephora moorei*



*A. Leaves peltate, i.e., petiole inserted in from the edge of the lamina. Leaves 4 to 12 cm long, pale greyish green on undersurface.

SNAKE VINE *Stephania japonica* var. *discolor*



*5. Plants glabrous.

9. Leaves very soft, sometimes almost fleshy.

10. Leaves triangular with distinct lobes at base, see *3, page 22.

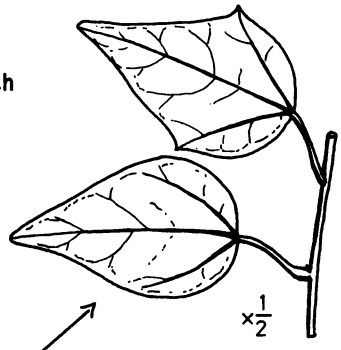
*10. Leaves ovate to broad-ovate to orbicular, margins entire or with 1 or 2 angles.

FLACOURTIACEAE

(Streptothamnus)

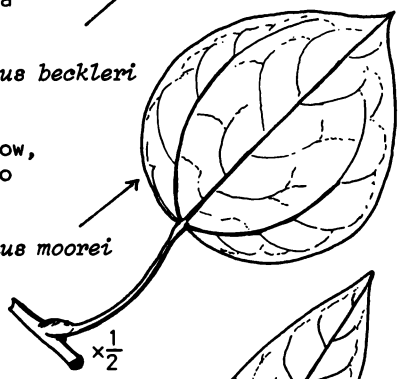
A. Leaves very pale, often greyish on the undersurface, ovate to broad-ovate, 3 to 5 cm long, the margins often with 1 or 2 angles; 2 distinct hairy domatia present (at base of the main vein).

MOUNTAIN REDBERRY VINE *Streptothamnus beckleri*



*A. Leaves green on both surfaces, somewhat paler below, broad-ovate to orbicular, margins not angled, 5 to 12 cm long. Domatia absent or inconspicuous.

COAST REDBERRY VINE *Streptothamnus moorei*

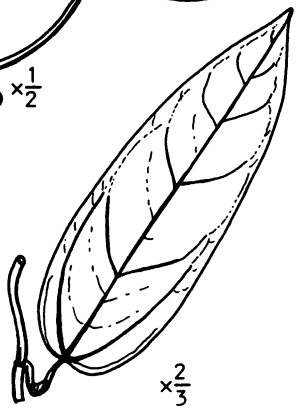


*9. Leaves of firm to sometimes tough or rigid texture.

11. Leaves lanceolate to narrow-elliptical, 5 to 15 cm long truncate to slightly cordate at the base. Petioles twisted, short, mostly less than 2½ cm long, and without an apical swelling. Leaf base expanded into a horizontal ridge extending 3/4 way around the stem.

ARISTOLOCHIACEAE

MOUNTAIN ARISTOLOCHIA *Aristolochia deltantha* var. *laheyana*

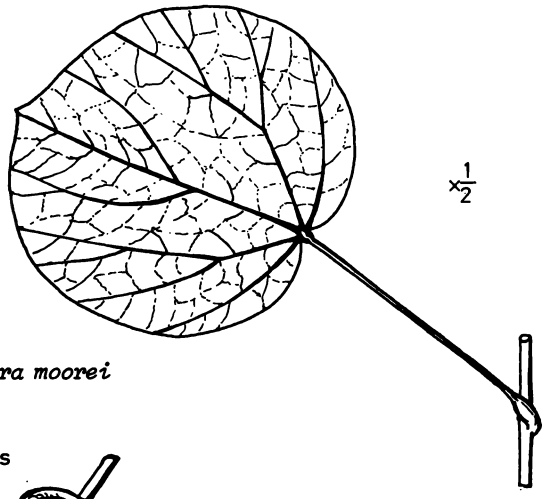


*11. Leaves ovate-cordate to orbicular-cordate or broadly triangular in outline. Petioles mostly 3 to 12 cm long, and often with a distinct swelling near the apex.

MENISPERMACEAE

MENISPERMACEAE

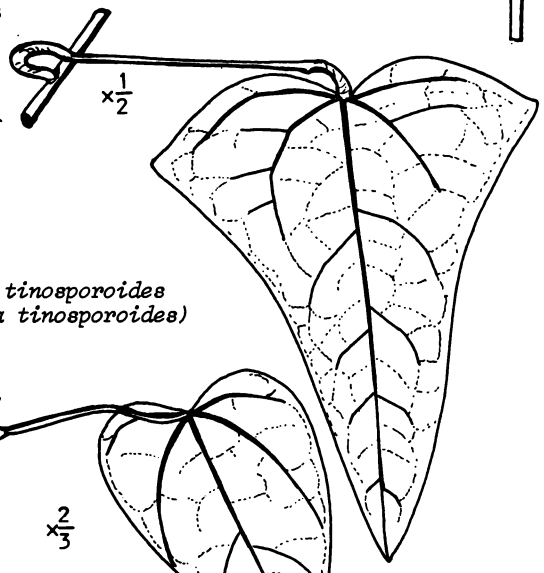
A. Leaves ashy coloured on the undersurface. Leaves orbicular to ovate-cordate, often very large, 6 to 15 cm long, petioles often longer than the lamina. Tall climber in warmer Rf, usually noticed only by fallen leaves on forest floor.



ROUND-LEAF VINE *Legnephora moorei*

*A. Leaves green on both surfaces. Leaves broadly triangular to ovate-cordate, not orbicular, Petioles usually not as long as the lamina.

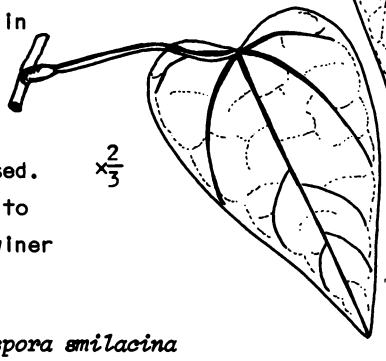
B. Leaves sharply angled at the base, mostly triangular or hastate, 9 to 15 cm long, net veins prominent on both surfaces. Petioles 3 to 10 cm long. In wetter STRf north from the Richmond River.



ARROW-HEAD VINE *Tinospora tinosporoides*
(Fawcettia tinosporoides)

*B. Leaves mostly rounded or cordate at the base, not angular; ovate-cordate to broadly ovate-cordate in outline.

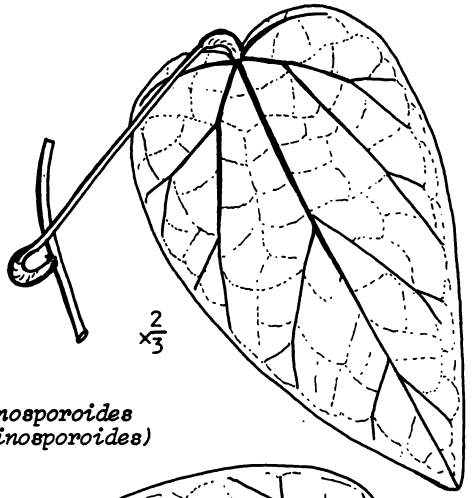
C. Upper pulvinus-like swelling small or absent. Venation obvious on both surfaces but not raised. Leaves rather thin, firm but not leathery, 4½ to 8 cm long, petioles 2½ to 7½ cm long. Rare twiner in dry Rf, north of the Richmond River.



TINOSPORA VINE *Tinospora smilacina*

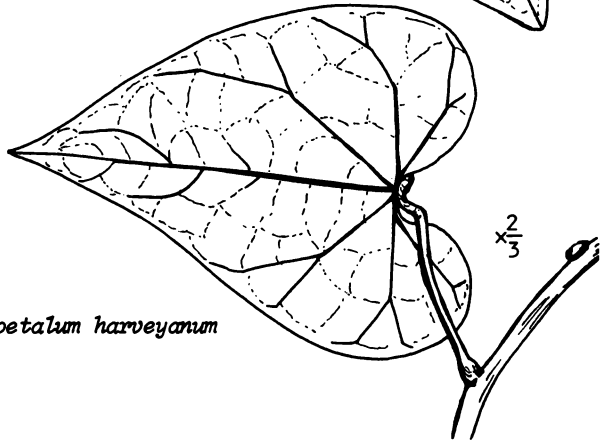
*C. Upper and lower pulvini obvious and elongated. Venation on both surfaces prominently raised. Leaves moderately thick to very thick.

D. Leaves ovate-cordate, with 5 veins radiating from base of lamina, with the inner pair extending less than half way up the lamina. Base of petiole much enlarged and twisted into a sharp curve. In wetter STRf north from the Richmond River.



ARROW-HEAD VINE *Tinospora tinosporoides*
(Fawcettia tinosporoides)

*D. Leaves broadly ovate-cordate, with 7 veins radiating from base of lamina, with the inner pair extending at least 3/4 way up the lamina. Base of petiole not twisted into a sharp curve. Common, in most types of Rf from Victoria to Queensland.



PEARL VINE

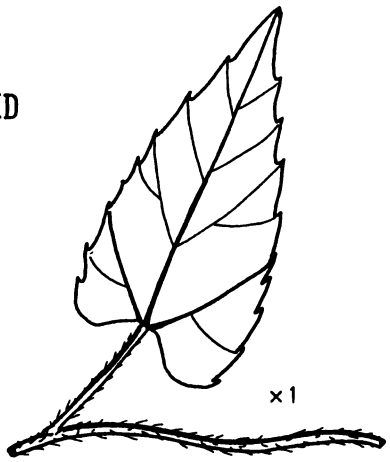
Sarcopetalum harveyanum

GROUP 10

LEAVES SIMPLE, ALTERNATE, PINNATELY VEINED

1. Leaves more or less triangular and toothed.

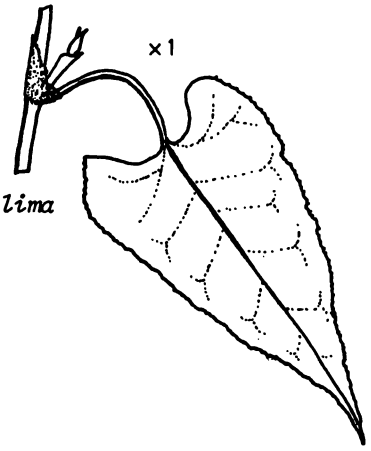
2. Stems and petioles with scattered hairs which sting on contacting the skin. Stipules present, small; ochreas absent.



EUPHORBIACEAE

STINGING VINE — *Tragia novae-hollandiae*

*2. Plants glabrous. Small stipular sheath (ochrea) present at nodes.



POLYGONACEAE

CLIMBING LIGNUM — *Muehlenbeckia gracillima*

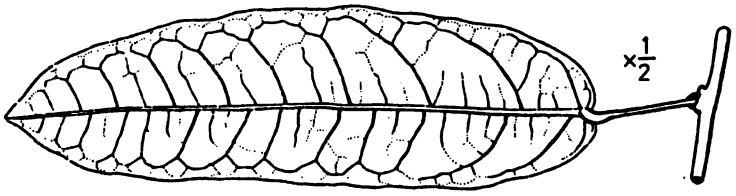
*1. Leaves not triangular. (Sometimes almost triangular in *Anredera* but then the margins entire.)

3. Apex of petiole with a distinct pulvinus-like swelling.

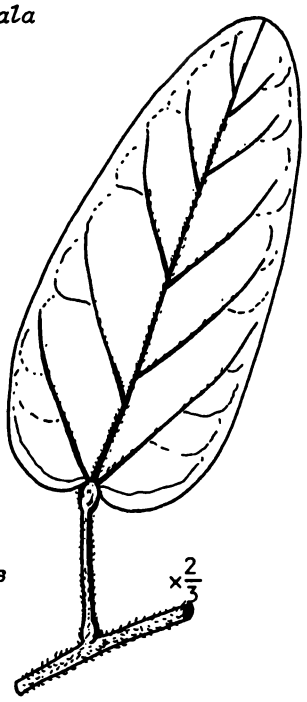
MENISPERMACEAE

A. Mature leaves glabrous, dark green above, paler below, oblong, firm to tough. Young shoots brown-pubescent.

CARRONIA — *Carronia multisepala*



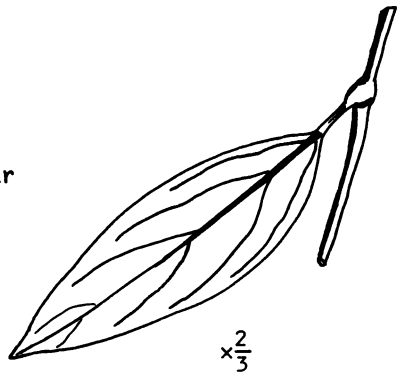
*A. Young stems, petioles and leaf veins (especially on lower surface) softly hairy with fawn spreading hairs. Leaves ovate-cordate, thinly firm.



PLEOGYNE — *Pleogyne australis*

*3. Apex of petioles not swollen.

4. Stipules present on youngest stems and leaving an annular scar at each node on older stems. Plants climbing by numerous, small adventitious roots.



PIPERACEAE

GIANT PEPPER VINE — *Piper novae-hollandiae*

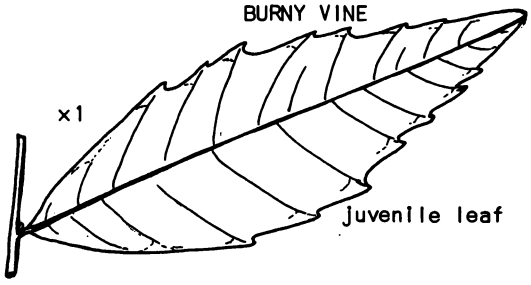
(exposed sun leaves)

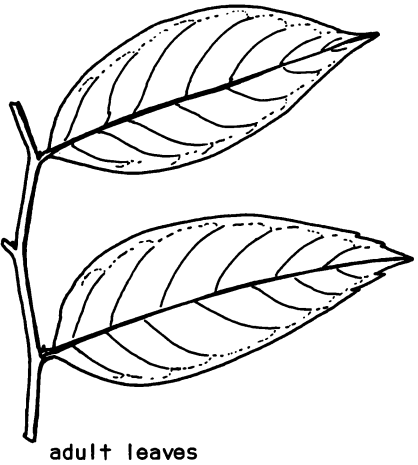
*4. Stipules absent or very small, not leaving annular scars. Plants not climbing by adventitious roots.

5. Leaves rather scabrous below, often with a few small teeth towards the apex, otherwise entire. Juvenile leaves regularly toothed. Milky latex sometimes present. Bark on twigs very tough. Lenticels on branchlets. Petioles 5-10mm long.

MORACEAE

Malaisia scandens





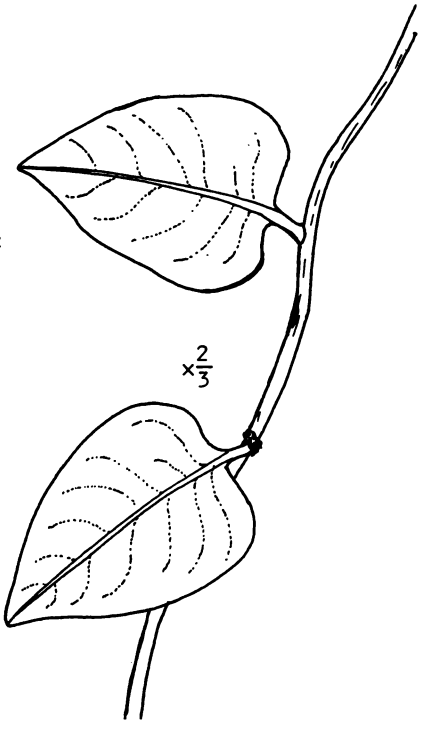
*5. Leaves not scabrous, either entire or with very fine even teeth. Latex absent. Bark not markedly tough.

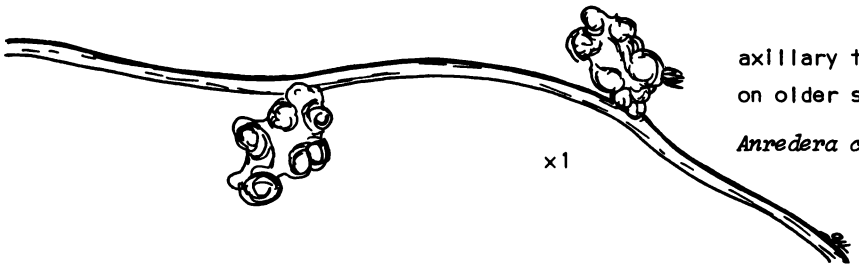
6. Leaves very soft, fleshy, thick, 3 to 8 cm long. Axillary tubers borne at some nodes.

BASELLACEAE

MADEIRA VINE — **Anredera cordifolia*

*6. Leaves firm, not distinctly fleshy. Axillary tubers absent.



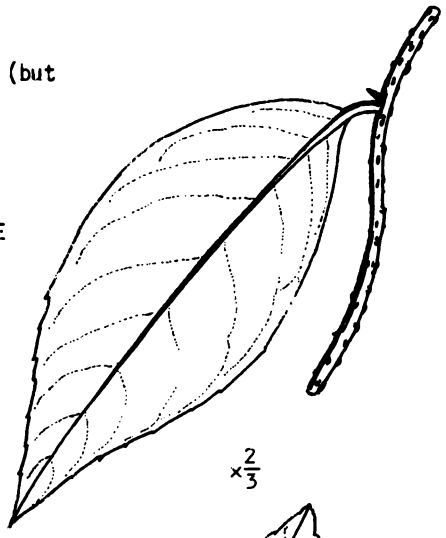


axillary tubers on older stem of *Anredera cordifolia*

7. Leaf margins mostly toothed, the teeth sometimes very fine (but can be detected by running the finger down the margin). Branchlets with very numerous raised, pale lenticels. Axillary buds scaly, stiff and pointed.

CELASTRACEAE

(Celastrus)

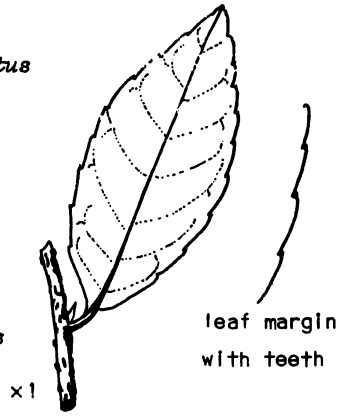


A. Main lateral veins strongly curved, 7 to 10 pairs. Leaves mostly gradually acuminate to a fine point, occasionally acute, medium to large, 5½ to 13 cm long, 2 to 6 cm wide. Stems mostly red-brown or dark brown.

LARGE-LEAF STAFF VINE *Celastrus subspicatus*

*A. Main lateral veins straight then forking, or slightly curved to irregular, 5 to 8 pairs. Leaves mostly shortly tapering to a blunt or apiculate point or slightly acuminate, small to medium-sized, 3 to 7 cm long, 1 to 2½ cm wide. Stems mostly grey to grey-brown.

STAFF VINE *Celastrus australis*

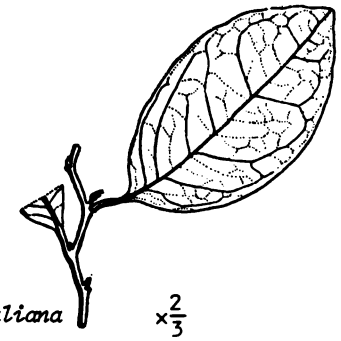


*7. Leaf margins entire. Branchlets without a conspicuous pattern of fine raised lenticels.

8. Leaves with translucent or opaque dots scattered evenly over the surface. Leaves acute at the apex, broadly elliptical. Shoots glabrous. Branchlets usually distinctly zig-zag.

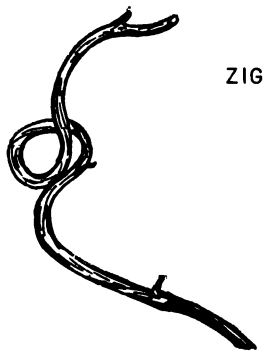
MYRSINACEAE

EMBELIA *Embelia australiana*



*8. Leaves lacking translucent or opaque dots.

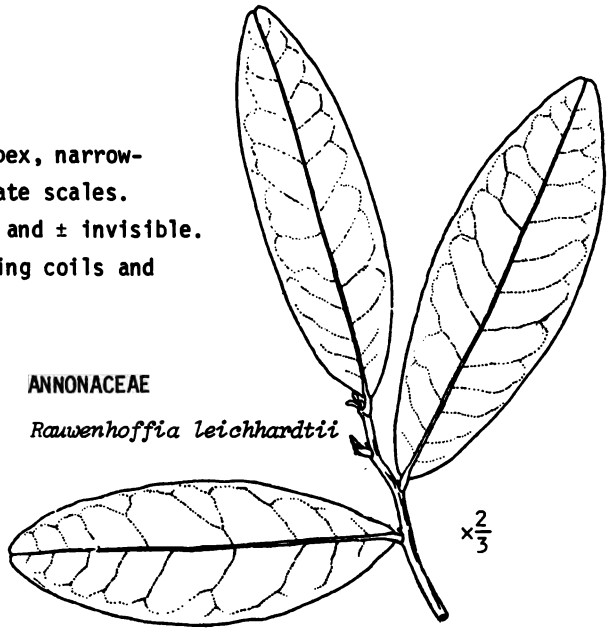
9. Leaves obtuse or slightly notched at the apex, narrow-elliptical. Young shoots with brown stellate scales. Translucent dots often present, but minute and ± invisible. Branchlets strongly zig-zag and often forming coils and knot-like bends around supports.



ZIG-ZAG VINE

ANNONACEAE

Rauwenhoffia leichhardtii



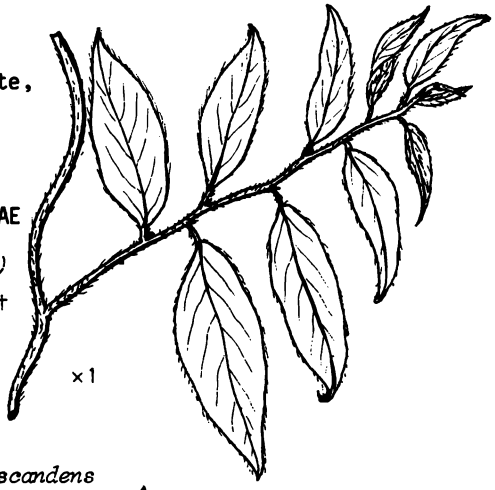
*9. Leaves acute at the apex. Branchlets not strongly zig-zag and not forming coils and knot-like bends around supports.

10. Mature leaves 1 to 5 cm long, sessile or shortly petiolate, petiole less than 1 cm long. Twiners with stems a few metres long.

PITTOSPORACEAE

(Billardiera)

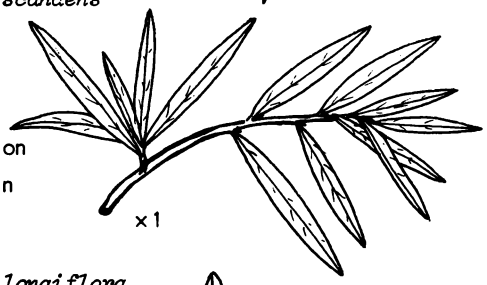
A. Young shoots densely hairy, leaves hairy at least on undersurface, soft, margins often undulate. Petiole ½ to 1 cm long. Widespread twiner on Rf margins and in sclerophyll forests.



×1

COMMON APPLE-BERRY *Billardiera scandens*

*A. Leaves almost glabrous (a few hairs on margins), firm, margins not undulate, lamina gradually tapering into the leaf base. Occasional twiner on Rf margins and in sclerophyll forests in mountain areas south from Barrington Tops.



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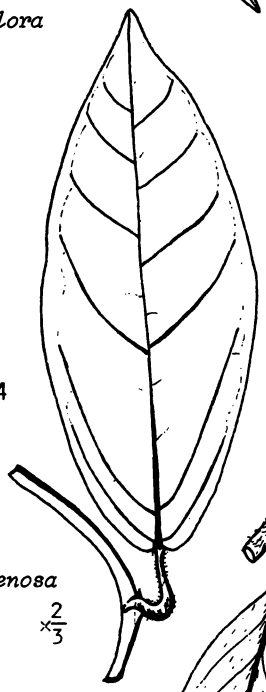
PURPLE APPLE-BERRY *Billardiera longiflora*

*10. Mature leaves greater than 5 cm long, petioles 1 to 4 cm long. Woody climbers in Rf.

11. Leaves firm, usually very stiff and leathery, glabrous or with sparse hairs on petioles and veins on the undersurface. Leaves 8 to 18 cm long, petioles 1 to 2½ cm long, thickened and twisted. Leaf base with a horizontal ridge extending 3/4 the way around the stem. Leaves elliptical or oblong-elliptical, slightly cordate at the base.

ARISTOLOCHIACEAE

ARISTOLOCHIA *Aristolochia praevenosa*



×⅔

*11. Leaves very soft and herbaceous, softly pubescent below. Leaves 5 to 15 cm long, petiole 1 to 4 cm long, not rigid or twisted. Leaf base not extended into a horizontal ridge around the stem. Leaves lanceolate to broad-lanceolate, tapering into the petiole.

AMARANTHACEAE

CLIMBING DEERINGIA *Deeringia arborescens*

×⅔

GROUP 11

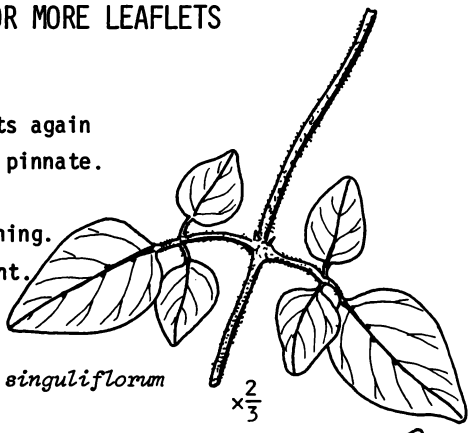
LEAVES OPPOSITE AND COMPOUND WITH 3 OR MORE LEAFLETS

1. **Leaves either with 3 leaflets or sometimes with the 3 leaflets again divided into 3, or with further subdivision; never regularly pinnate.**

   2. **Shoots hairy. Petioles and petiolules short and never twining. Petioles less than 2 cm long. Small domatia usually present.**

      OLEACEAE

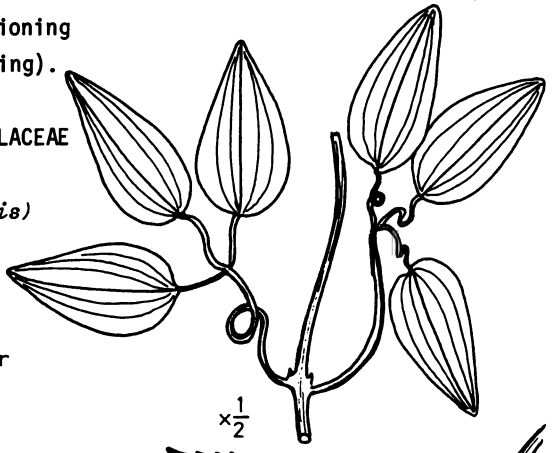
      SOFT JASMINE *Jasminum singuliflorum*



   *2. **Shoots glabrous. Some petiolules much extended and functioning as tendrils (sometimes a number of the petioles also coiling). Petioles 2 to 12 cm long. Domatia absent.**

      RANUNCULACEAE

      (Clematis)



      A. Leaves with 3 leaflets.

         B. Leaflets entire or with 1 or 2 teeth near the base.

            FOREST CLEMATIS *Clematis glycinoides*

         *B. Leaflets with 5 to many marginal teeth.

            TOOTHED CLEMATIS *Clematis aristata*

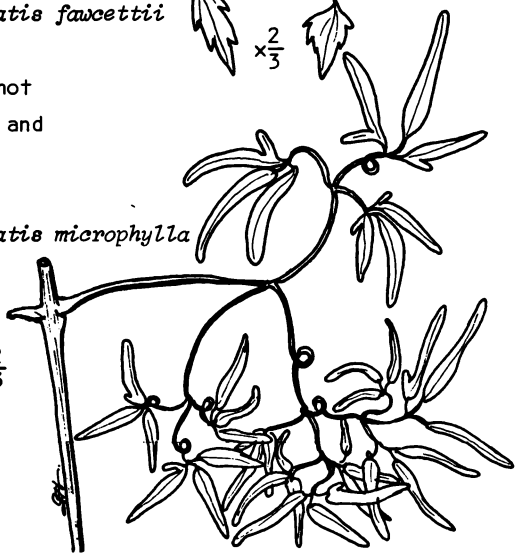
      *A. Leaves with 9 or more leaflets, the leaflets sometimes irregularly lobed.

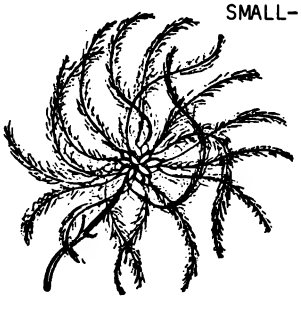
         C. Margins of leaflets toothed, sometimes deeply so. Very rare.

            NORTHERN CLEMATIS *Clematis fawcettii*

         *C. Margins of leaflets entire or lobed, not toothed. Common in drier rainforests and scrubs.

            SMALL-LEAVED CLEMATIS *Clematis microphylla*





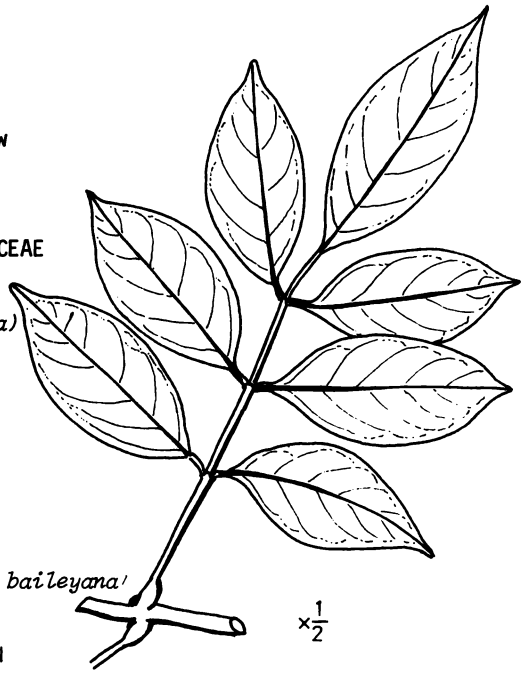
fruits of *Clematis*

×1

***1. Leaves regularly pinnate, with 5 to 17 leaflets (rarely a few leaves on each shoot trifoliolate).**

BIGNONIACEAE

(Pandorea)

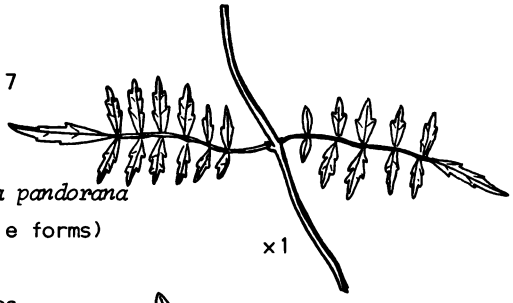


A. Net-veins and main lateral veins raised and obvious, especially on the undersurface of the leaflets. Leaves in pairs or often in whorls of 3 or 4.

LARGE-LEAVED WONGA VINE *Pandorea baileyana*

*A. Net-veins faint or obscure, the main lateral veins also not very prominent. Leaves mostly in pairs, sometimes in 3s.

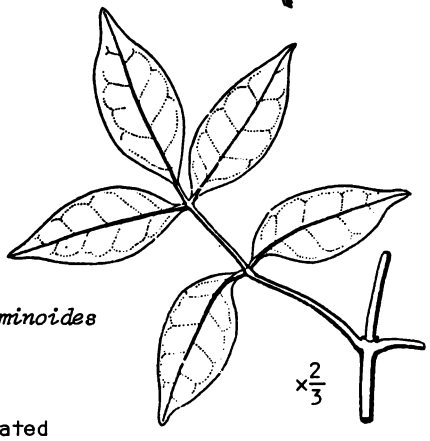
B. Leaflets very small, narrow to broad, 9-17 per leaf, bluntly toothed.



WONGA VINE *Pandorea pandorana* (juvenile forms)

*B. Leaflets large, 5-7 per leaf (or sometimes 3 or 9), entire.

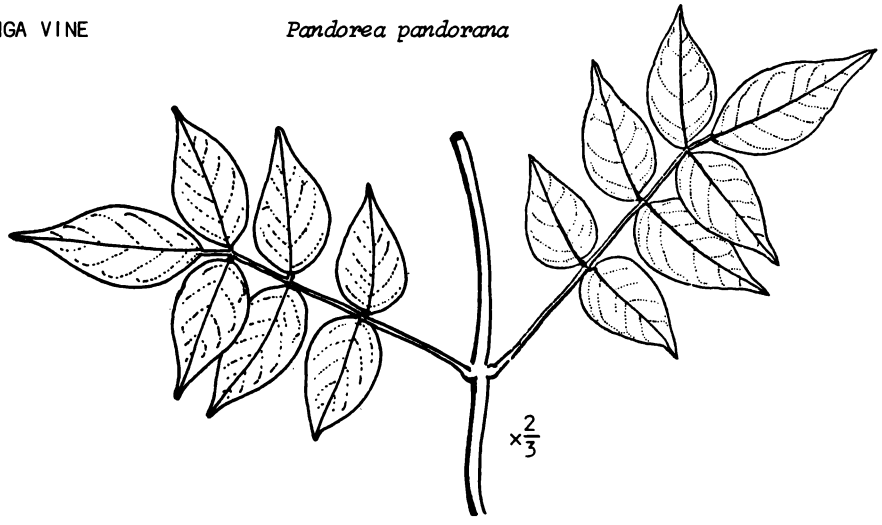
C. Leaflets gradually drawn out into a rather long blunt point; lowest leaflets of each leaf usually asymmetric. Rachis markedly elongated between the leaf-pairs.



BOWER VINE *Pandorea jasminoides*

*C. Leaflets abruptly and shortly pointed, not markedly asymmetric. Rachis not much elongated between the leaflet-pairs.

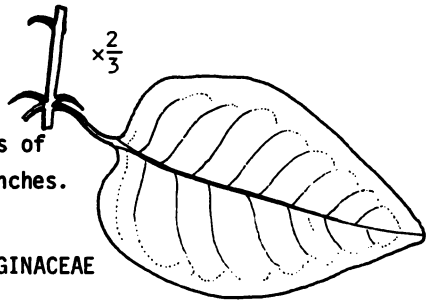
WONGA VINE *Pandorea pandorana*



GROUP 12

LEAVES SIMPLE, OPPOSITE. PLANTS LACKING MILKY OR YELLOWISH LATEX OR WATERY SAP.

1. Thorns or fine prickles present.

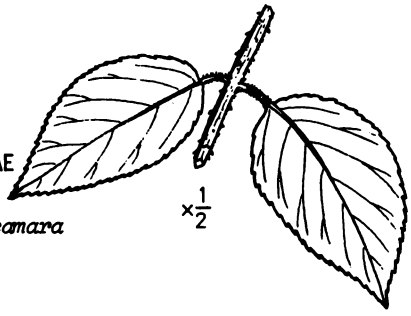


2. Stout, curved axillary thorns present at some nodes. Margins of leaves entire. Leaves often clustered on short axillary branches. Leaves thin and soft, not scabrous. Large climber.

NYCTAGINACEAE

THORNY PISONIA — *Pisonia aculeata*

*2. Branches with fine recurved prickles, axillary thorns absent. Margins of leaves toothed. Leaves scabrous (rough to the feel), not clustered. Large scrambling shrub.

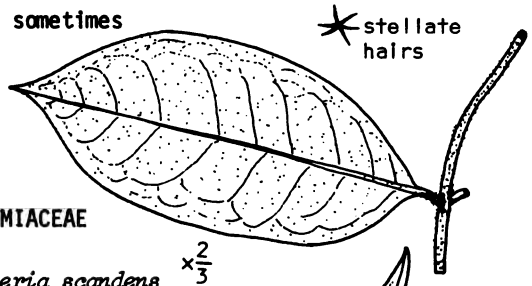


VERBENACEAE

LANTANA — **Lantana camara*

*1. Thorns and prickles absent.

3. Leaves with numerous, minute, translucent oil dots (lens needed), aromatic when crushed. Margins of leaves usually entire, sometimes very finely crenate.

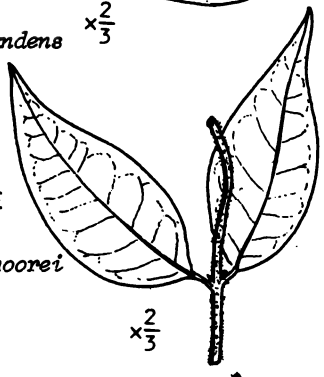


4. Leaves with scattered very small, rough stellate hairs (lens needed).

MONIMIACEAE

ANCHOR VINE — *Palmeria scandens*

*4. Leaves without stellate hairs, but young shoots and leaves with simple hairs.



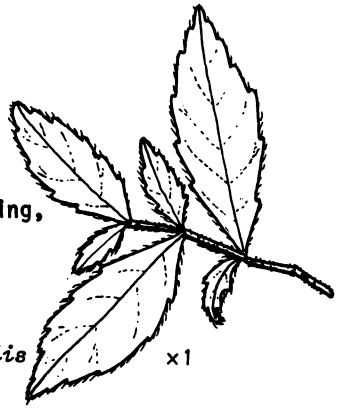
TRIMENIACEAE

BITTER VINE — *Piptocalyx moorei*

*3. Leaves lacking regular translucent oil dots. Margins of leaves entire or crenate or toothed.

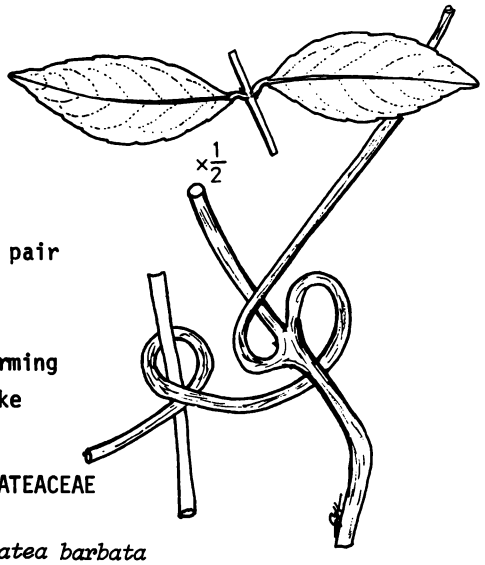
5. Margins of leaves crenate or toothed, sometimes finely so.

6. Leaves very soft, and also softly and distinctly hairy. The two leaves of each pair very unequal in size. Branches creeping, pendulous. Small climber on tree trunks, treeferns and rocks.



GESNERIACEAE

FIELDIA — *Fieldia australis*



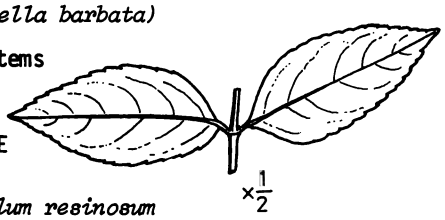
*6. Leaves glabrous or almost so. The two leaves of each pair approximately equal in size.

7. Leaves slightly glossy above, dull below. Stems forming at intervals tight, short coils and abrupt, knot-like bends around supports.

HIPPOCRATEACEAE

KNOT-VINE — *Hippocratea barbata* (*Loeseneriella barbata*)

*7. Leaves very glossy above, moderately glossy below. Stems twining in loose elongated spirals.

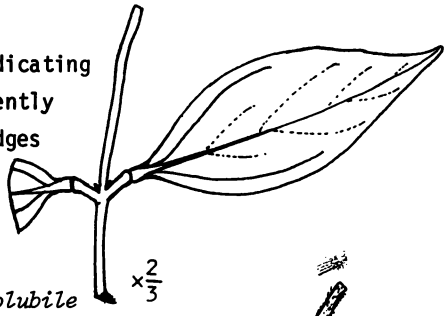


CUNONIACEAE

GUM VINE — *Aphanopetalum resinosum*

*5. Margins of leaves entire.

8. Petiole distinctly jointed a little above the base (indicating evolutionary reduction from a compound leaf to an apparently simple leaf). No interpetiolar stipules or scars or ridges present.



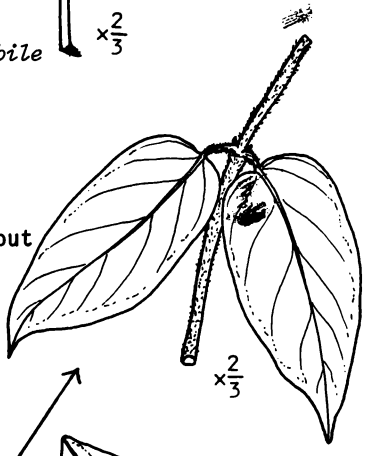
OLEACEAE

STIFF JASMINE — *Jasminum volubile*

*8. Petiole lacking a joint.

9. Petioles and young stems with fine hairs. Domatia not present. Interpetiolar stipules and scars not present (but smooth ridges sometimes present between petiole bases).

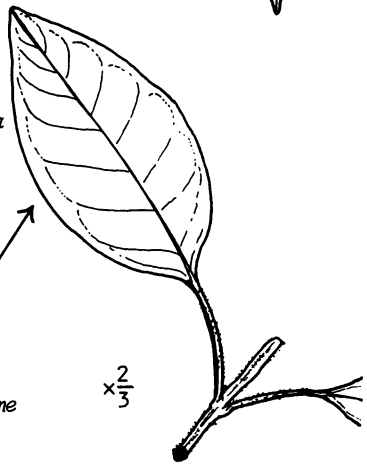
10. Stems terete. Smooth ridge present between petiole bases. Climbing plant on Rf margins and in partly cleared areas.



CAPRIFOLIACEAE

HONEYSUCKLE VINE — **Lonicera japonica*

*10. Stems 4-angled. Smooth ridge not present between petiole bases. Scrambling or semi-climbing shrubs on margins between mangrove communities and Rf.

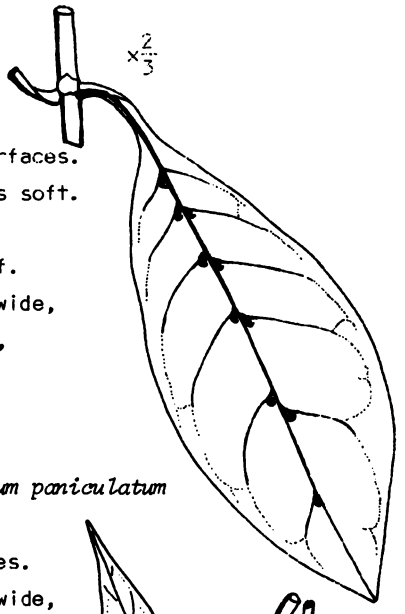


VERBENACEAE

SCRAMBLING CLERODENDRUM — *Clerodendrum inerme*

*9. **Petioles and stems glabrous or with minute inconspicuous hairs. Domatia present, sometimes small and sometimes not on every leaf. Interpetiolar stipules present at upper nodes and leaving transverse scars at lower nodes.**

RUBIACEAE



A. Domatia conspicuous on both lower and upper surfaces. Fine reticulate veins faint or obscure. Leaves soft.

B. Domatia 5-12, regularly present on every leaf. Leaves mostly 7 to 16 cm long and 2 to 7 cm wide, oblanceolate to obovate or narrow-elliptical, shortly tapered at the apex or almost blunt. Uncommon twiner in Littoral and STRf.

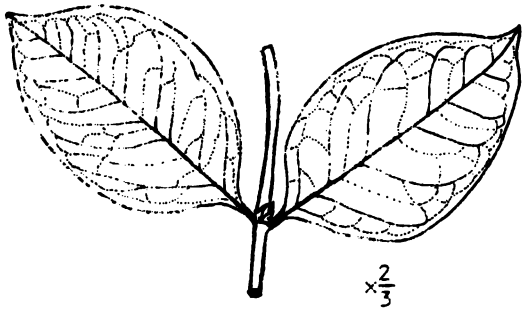
COELOSPERMUM *Coelospermum paniculatum*

*B. Domatia 1-4, and often absent from some leaves. Leaves mostly 3 to 8 cm long and 1 to 3½ cm wide, lanceolate to ovate or narrow-elliptical, drawn out to a long narrow point at the apex. Widespread in most types of Rf.

MORINDA *Morinda jasminoides*

*A. Domatia minute, inconspicuous, not forming raised spots on upper leaf surface but regularly present and numerous. Fine reticulate veins very distinct and raised on both leaf surfaces. Leaves of tough, dry texture, mostly 3½ to 8 cm long and 1½ to 3½ cm wide, drawn out to a fine point at the apex. Scrambler in dry Rf.

VEINY MORINDA *Morinda acutifolia*



Morinda acutifolia

GROUP 13

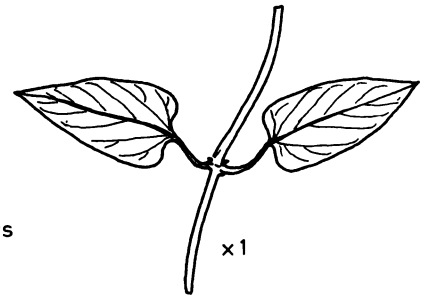
LEAVES SIMPLE, OPPOSITE, WITH LATEX AND WITH BASAL GLANDS.

All species are in the family ASCLEPIADACEAE

A. Petioles and stems exuding clear sap when cut, the sap watery or with a yellowish tinge.

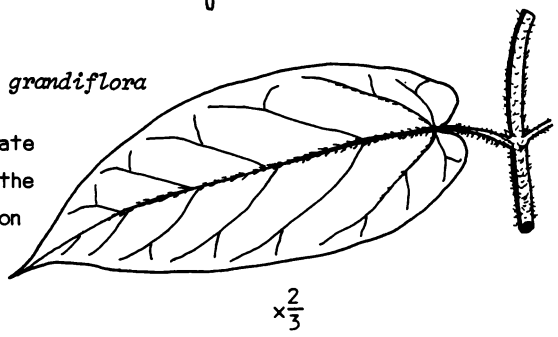
B. Fully expanded leaves softly pubescent on the under-surface. Mature petioles and branchlets densely pubescent.

C. Leaves 1 to 4 cm long, ovate to oblong-ovate, cordate to truncate at the base, the apex finely pointed. Hairs fine, colourless or very pale fawn. Small twiner, in dry Rf away from the sea.



SMALL-LEAVED TYLOPHORA *Tylophora grandiflora*

*C. Leaves 7 to 18 cm long, ovate or oblong-ovate, acuminate or mucronate to a fine point at the apex, cordate at the base. Hairs rust-coloured to fawn, long and obvious on stems and leaf-veins, furry on young shoots. Slender twiner in littoral Rf.

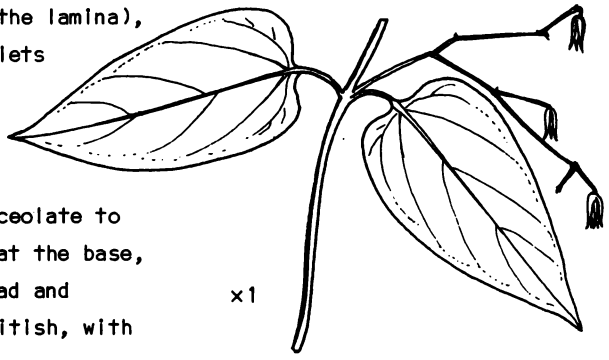


RUSTY VINE *Thozetia racemosa*

*B. Fully expanded leaves glabrous or finely hairy along the main veins (sometimes with fine, sparse hairs on the lamina), not softly pubescent. Mature petioles and branchlets glabrous to moderately hairy.

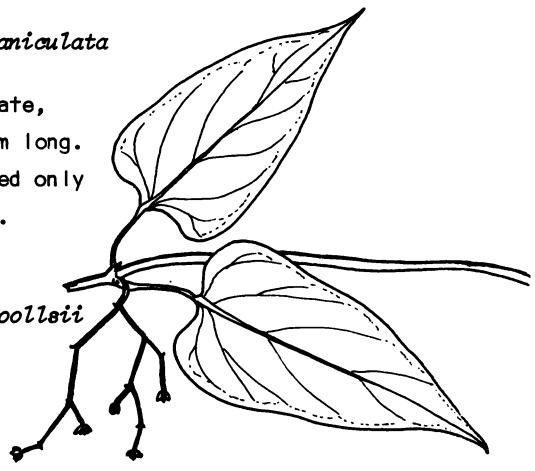
D. Leaves cordate at the base.

E. Leaves thin and soft, variable in shape, lanceolate to broad-ovate, cordate to rounded or truncate at the base, 3 to 9 cm long. Basal glands 2-7. Widespread and common slender twiner. (Flowers green to whitish, with long narrow petals).



THIN-LEAVED TYLOPHORA *Tylophora paniculata*

*E. Leaves firm, of medium thickness, ovate or broad-ovate, slightly to strongly cordate at the base, 3½ to 8 cm long. Basal glands mostly 4. Rare, slender twiner recorded only from Parramatta and from Clouds Creek NE of Dorrigo. (Flowers red-purple with short broad petals).

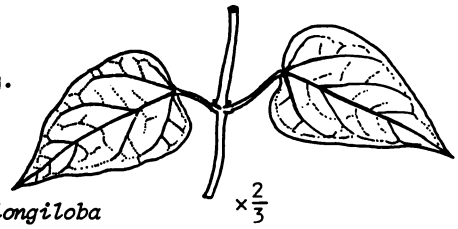


WOOLLS' TYLOPHORA *Tylophora woollsii*

*D. Leaves truncate or rounded or cuneate at the base.

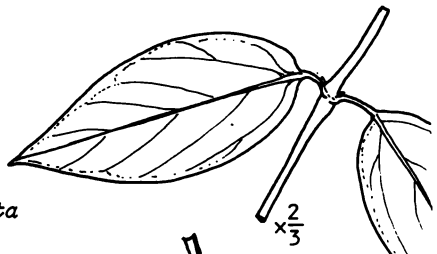
F. Leaves glabrous, lanceolate to ovate, 3 to 10 cm long. Rare twiner in subtropical Rf north from Coffs Harbour.

SLENDER MARSDENIA *Marsdenia longiloba*



*F. Leaves finely hairy at least along the main veins, lanceolate to broad-ovate. Widespread and common twiner, in subtropical and dry Rf north from the Hunter River.

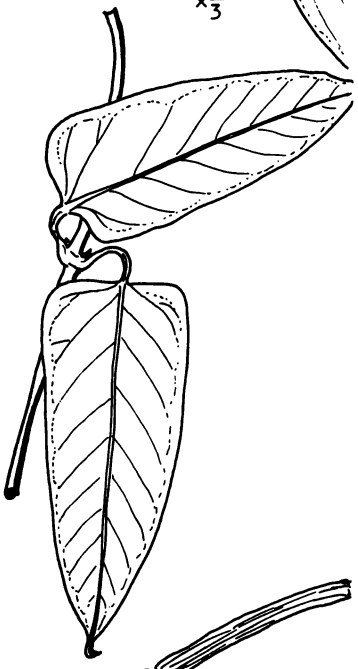
THIN-LEAVED TYLOPHORA *Tylophora paniculata*



*A. Petioles and stems exuding opaque, milky or yellowish-milky latex when cut.

G. Undersurface of leaves glaucous, pale whitish green, dull, with a close dense covering of minute hairs. Leaves ovate-triangular to oblong-ovate, soft, 4 to 10 cm long. Leaf glands 2 to 4. A twiner on Rf margins and in regrowth.

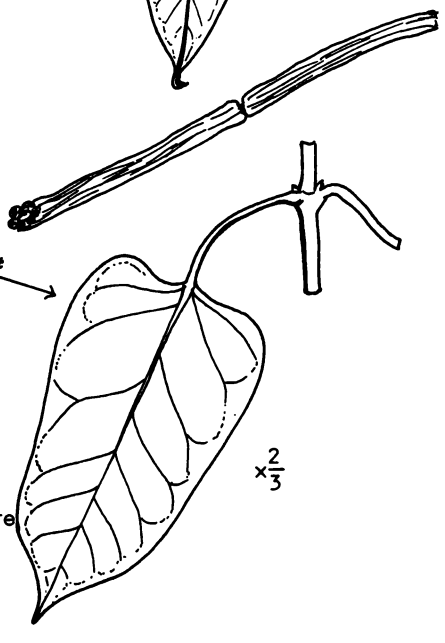
MOTH VINE **Araujia hortorum*



*G. Undersurface of leaves green, pale green or yellowish, not whitish or glaucous.

H. Thin stems a little below the leafy portion becoming covered with whitish, soft, fissured cork (i.e. such cork present on stems as thin as 2 to 6 mm thick). Leaves oblong to broad-oblong, mostly cordate and broad at the base, abruptly narrowed to a fine point at the apex, 5 to 10 cm long. Lamina often whitish near the main veins. Glands 5 to 8. Twiner in warmer Rf types.

CORKY MILK VINE *Marsdenia suberosa* *Lloydii*

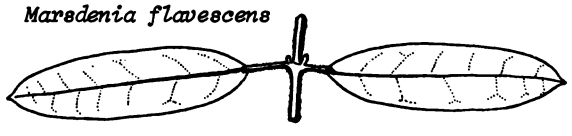


*H. Thin stems not whitish-corky, the old stems (over 1 cm diam.) sometimes brownish-corky.

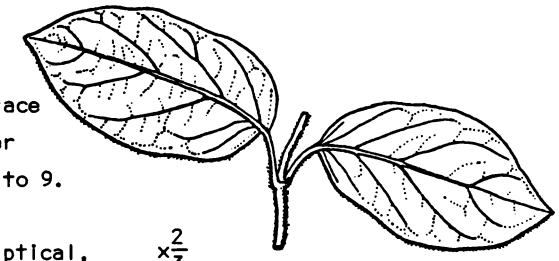
I. Mature leaves softly pubescent on the undersurface.

J. Lateral and reticulate veins invisible on the undersurface of the leaf. Leaves oblong-lanceolate to oblong-elliptical, 3 to 12 cm long, 2½ to 4½ times as long as wide, very soft, pale yellowish green below. Leaf glands 2 to 4. In most types of Rf, widespread.

HAIRY MILK VINE *Marsdenia flavescens*



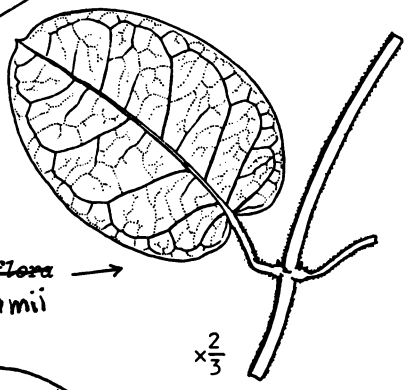
*J. Lateral and reticulate veins distinct on the undersurface of the leaf. Leaves ovate to broadly elliptical, never oblong, 1 to 2½ times as long as wide. Leaf glands 5 to 9.



×⅔

K. Leaves rounded to cuneate at the base, ovate or elliptical, 2½ to 7 cm long. Small domatia present. Sap white. In dry Rf away from the sea, north from Hunter River.

DOWNY GYMNEMA *Gymnema* species



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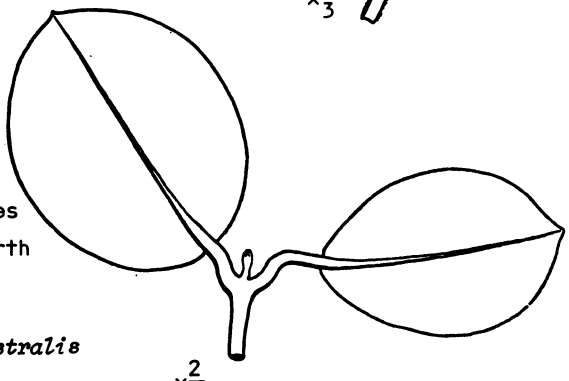
*K. Leaves cordate at the base, broadly ovate or elliptical, 6 to 11 cm long. Domatia absent. Sap yellowish. In littoral Rf north from Sawtell.

COAST TYLOPHORA *Tylophora ~~crebriflora~~ benthamii*

*I. Mature leaves glabrous on the undersurface or sparsely pubescent along the veins only.



×⅔

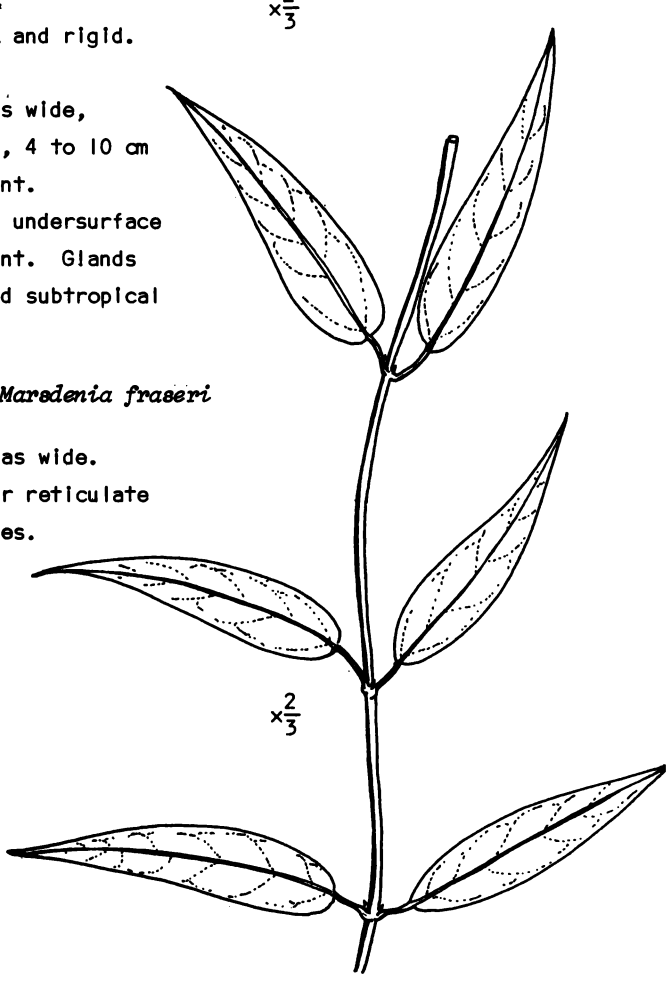
L. Leaves very thick, rigid but fleshy, broadly elliptical to round or broad-obovate, abruptly pointed, 5 to 12 cm long. Veins faint or invisible, except the midvein. Twiner, sometimes rooting at the nodes, in littoral and dry Rf north from the Macleay River.

NATIVE HOYA *Hoya australis*

*L. Leaves rather thin and soft, never thick and rigid.

M. Leaves narrow, 2½ to 5 times as long as wide, narrow-lanceolate to oblong-lanceolate, 4 to 10 cm long, gradually tapering to a fine point. Reticulate veins invisible on the leaf undersurface and the lateral veins invisible or faint. Glands 2 or 3. Slender twiner in littoral and subtropical Rf, north from the Macleay River.

NARROW-LEAVED MILK VINE *Marsdenia fraseri*



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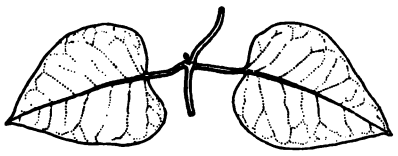
*M. Leaves broader, 1½ to 3 times as long as wide. Main lateral veins distinct and coarser reticulate veins distinct, at least in dried leaves.

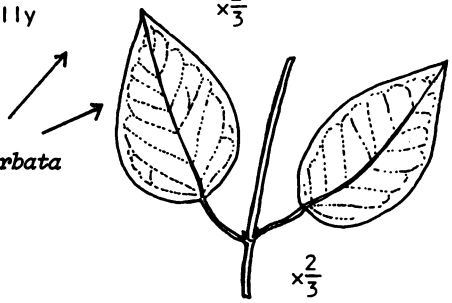
N. Leaf glands 2 to 4.



×$\frac{2}{3}$

O. Leaves small, 2 to 6 cm long, broad-lanceolate to ovate or elliptical, cuneate to truncate at the base; occasionally slightly cordate. Southern species, recorded from Manning River to Victoria. Small twiner.

BEARDED TYLOPHORA *Tylophora barbata*



×$\frac{2}{3}$

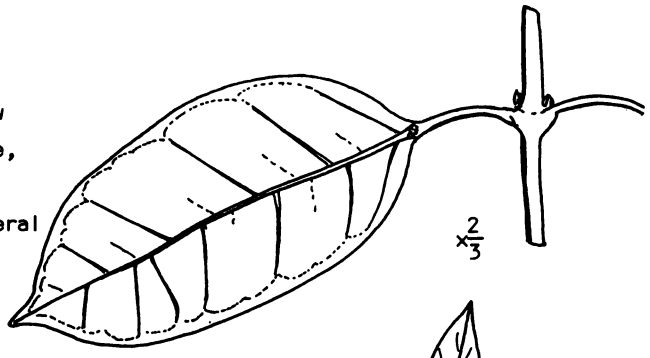
*O. Leaves mostly 5 to 12 cm long, (smaller in some exposed sites), oblong-acuminate, cordate to truncate at the base. Northern species, recorded from the Bellinger River and northward.

see drawings below

LARGE-FLOWERED MILK VINE *Marsdenia* species

*N.. Leaf glands 5 to 20.

P. Leaves mostly abruptly narrowed to a narrow but blunt point, variable in shape and size, 4 to 16 cm long, broad-cuneate to rounded or slightly cordate at the base. Main lateral veins making angles of 45° to 75° with the midvein. Very common and widespread large twiner, from Narooma northwards.

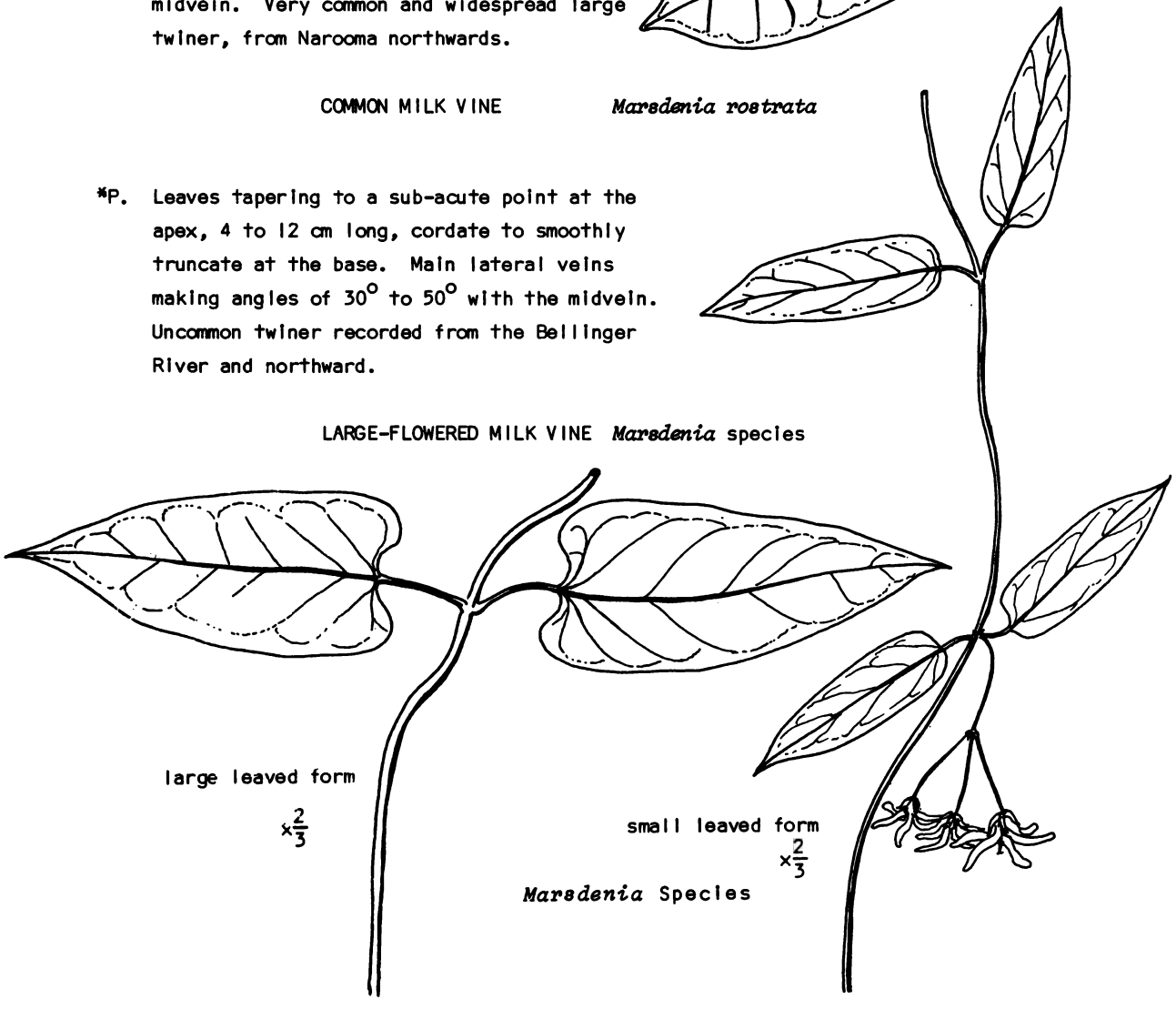


×$\frac{2}{3}$

COMMON MILK VINE *Marsdenia rostrata*

*P. Leaves tapering to a sub-acute point at the apex, 4 to 12 cm long, cordate to smoothly truncate at the base. Main lateral veins making angles of 30° to 50° with the midvein. Uncommon twiner recorded from the Bellinger River and northward.

LARGE-FLOWERED MILK VINE *Marsdenia* species



large leaved form

×$\frac{2}{3}$

small leaved form

×$\frac{2}{3}$

Marsdenia Species

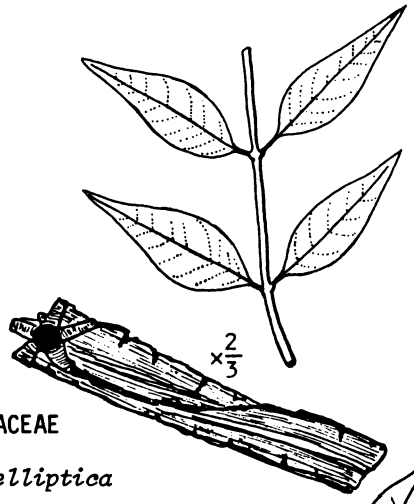
GROUP 14

LEAVES SIMPLE, OPPOSITE, WITH LATEX, WITHOUT GLANDS

1. Stems and petioles exuding opaque, milky latex when cut.

2. Petioles short, 1 to 6 mm long. Leaf blades rounded or cuneate at the base, not truncate or cordate.

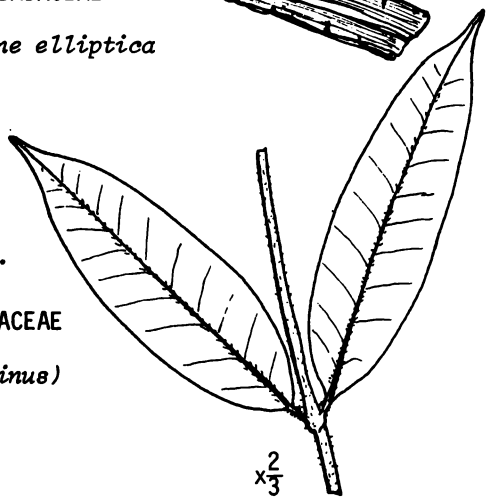
3. Leaves small, 2 to 5½ cm long, thin and soft, narrow-lanceolate to ovate, not oblong. Petioles very thin. Older stems (over 6 mm diameter) with thick, soft, deeply fissured corky bark. Tall climber in dry and littoral Rf north from Iluka.



ASCLEPIADACEAE

CORKY MILK VINE — *Secamone elliptica*

*3. Leaves larger, mostly 5 to 13 cm long, moderately thick and firm-textured, lanceolate to narrow-elliptical, often ± oblong. Petioles rather thick. Older stems without deeply fissured soft corky bark.



APOCYNACEAE

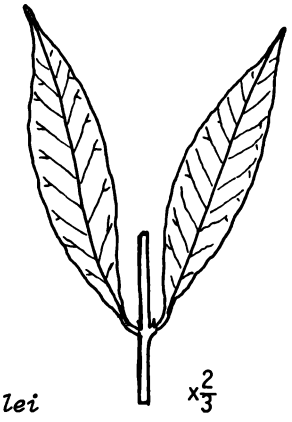
(Melodinus)

A. Leaves densely to sparsely hairy on the undersurface. Rare climber in subtropical Rf north from Byron Bay.

HAIRY MELODINUS — *Melodinus acutiflorus*

*A. Leaves glabrous.

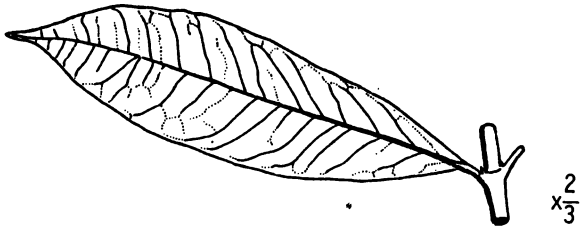
B. Leaves mostly very narrow-elliptical to narrow-lanceolate. (Corolla-lobes narrow, acute). Climber recorded in N.S.W. only from the Macleay and Manning River areas. *Difficult to distinguish from the following species in the absence of flowers.*



BELLBIRD VINE — *Melodinus guilfoylei*

*B. Leaves oblong-lanceolate to narrow-elliptical (Corolla-lobes very broad, obtuse). Common climber in most types of Rf from Kiama northwards.

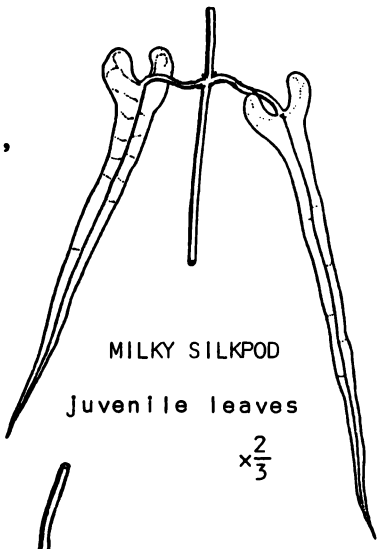
SOUTHERN MELODINUS — *Melodinus australis*



*2. Petioles long and slender, 10 - 45 mm long. Leaf blades broadly cordate to rounded-truncate at the base, not cuneate, 3 to 9 cm long, glabrous.

APOCYNACEAE

(Parsonsia)

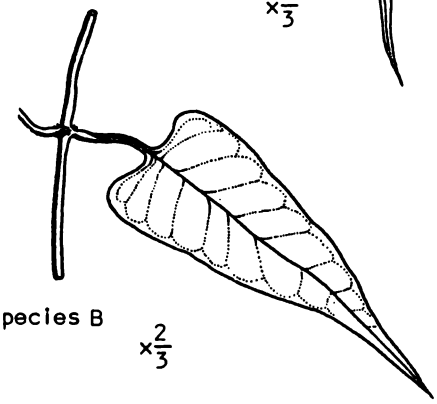


MILKY SILKPOD

Juvenile leaves

×$\frac{2}{3}$

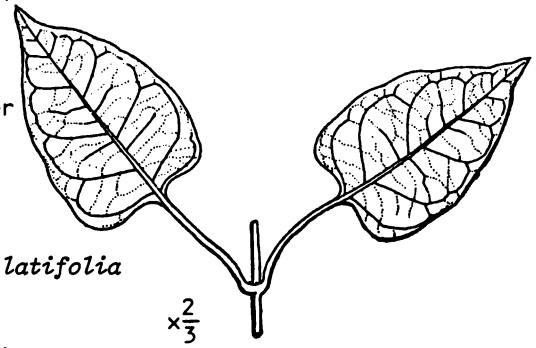
A. Leaves with 7 to 9 pairs of prominent, closely spaced main lateral veins; narrowly to broadly ovate-triangular or triangular. Petioles and leaf undersurfaces green to purplish (usually purplish in juvenile leaves). Apex very gradually acuminate. Leaves on juvenile plants often narrow and with 2 basal lobes. Slender twiner known only from the Bellinger River, Dorrigo and Woolgoolga districts.



MILKY SILKPOD *Parsonsia* species B

×$\frac{2}{3}$

*A. Leaves with 4 to 6 pairs of rather faint, widely spaced main lateral veins; ovate to broadly oblong-ovate or broadly triangular. Petioles green, very long, leaves evenly green. Apex moderately to abruptly acuminate. Leaves on juvenile plants broad, often slightly 2-lobed at the base. Twiner occasional in littoral and subtropical Rf north from Iluka.



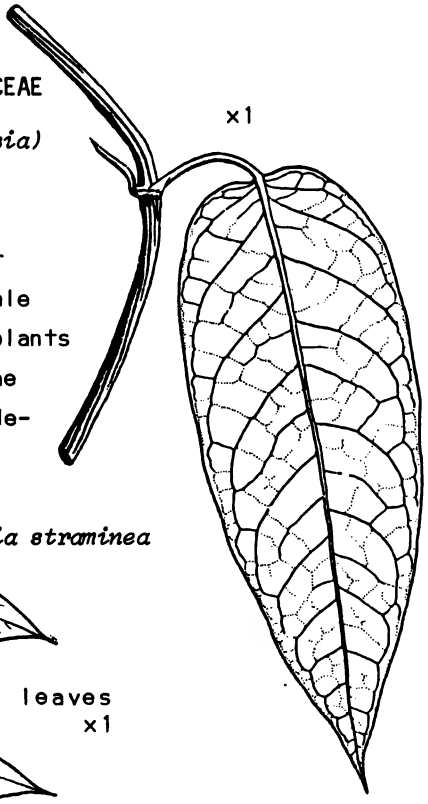
GREEN-LEAVED SILKPOD *Parsonsia latifolia*

×$\frac{2}{3}$

*1. Stems and petioles, when cut, exuding colourless or yellowish transparent sap.

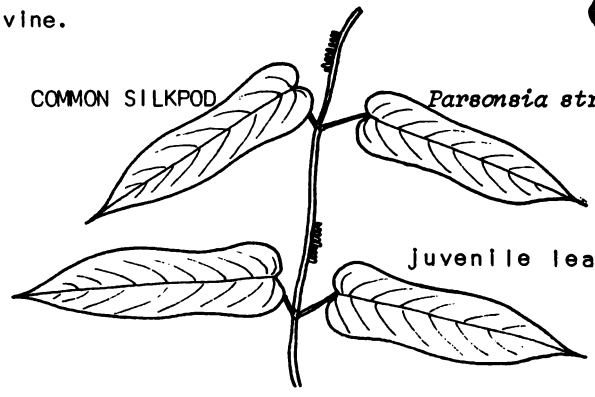
APOCYNACEAE

(Parsonsia)



×1

A. Plant creeping on tree trunks or branches with the aid of adventitious roots. Leaves on older plants medium-sized to large, leathery, very pale below, finely reticulate. Leaves on juvenile plants small, often only 1 to 4 cm long, cordate at the base, bright purple below. Very common and widespread vine.



COMMON SILKPOD *Parsonsia straminea*

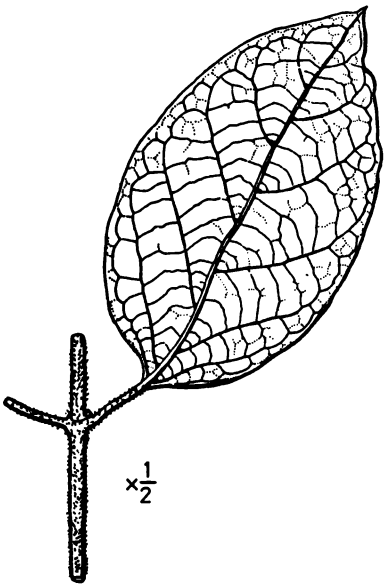
Juvenile leaves

×1

*A. Stems-twiners, not creeping along tree trunks by means of adventitious roots.

B. Undersurface of leaves softly pubescent. Stems and petioles also densely hairy.

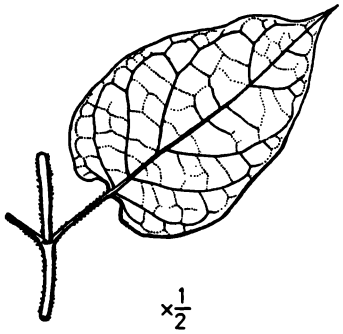
C. Hairs brownish especially on young stems and leaves, the young expanding leaves brown-silky or velvety on both surfaces. Leaves large and broad, more than 7 cm long and 4 cm wide (smaller leaves sometimes present on the flowering shoots). Leaves on juvenile plants with 2 basal lobes.



D. Undersurface of leaves with minute domatia (lens needed) as broad cavities in angles between main lateral veins and midrib. Leaves large to very large (except on flowering shoots), 8 to 20 cm long, 5 to 13 cm wide, often very brown-hairy below, shortly acuminate or acute at the apex, broad-cuneate or rounded-truncate or shallowly cordate at the base. Large common vine in subtropical Rf from Gibraltar Range northward.

FURRY SILKPOD *Parsonsia fulva*

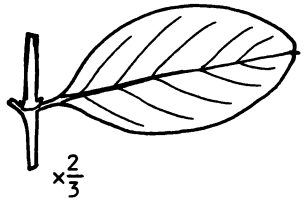
*D. Leaves lacking domatia; medium-sized, 7 to 15 cm long, 3½ to 9 cm wide, green or brownish below, mostly acuminate to a fine point at the apex, mostly deeply cordate at the base. Very common vine in most warmer types of Rf from Port Stephens northward.



HAIRY SILKPOD *Parsonsia velutina*

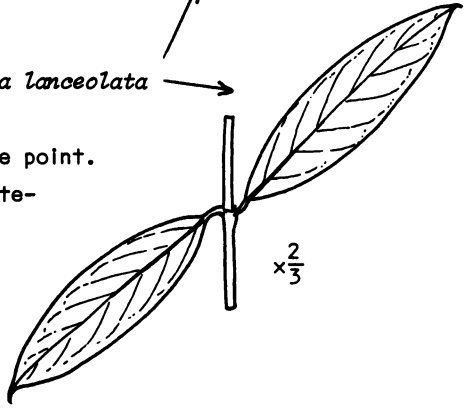
*C. Hairs colourless or pale, leaves and young shoots not brownish or silky. Leaves small and/or narrow, mostly either less than 7½ cm long or less than 4 cm wide (but up to 12 x 5 cm in *P.ventricosa*).

E. Apex of leaf rounded or shortly tapering or abruptly narrowed, always with a very short, stiff point. Leaves firm or leathery, thick, elliptical or lanceolate, 3 to 7½ cm long, cuneate or broad cuneate at the base. Climber in very dry Rf and vine thickets.

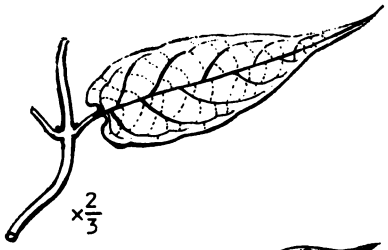


ROUGH SILKPOD *Parsonsia lanceolata*

*E. Apex of leaf very gradually acuminate to a fine point. Leaves soft and thin, narrow-lanceolate to ovate-lanceolate, rounded or cordate at the base.

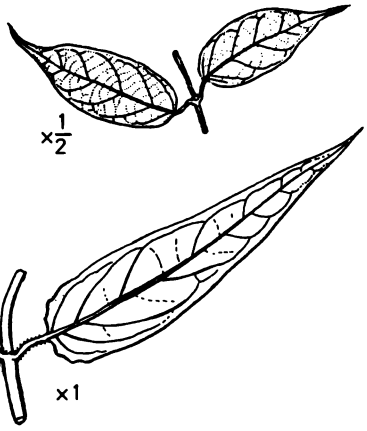


F. Secondary veins numerous and prominent on the undersurface, forming distinctive downwardly curving connections between the main lateral veins. Leaves dark green, glabrous and lustrous above, 4 to 12 cm long, 1½ to 5 cm wide. Common vine in warmer Rf types north from Lismore.



ACUMINATE SILKPOD *Parsonsia ventricosa*

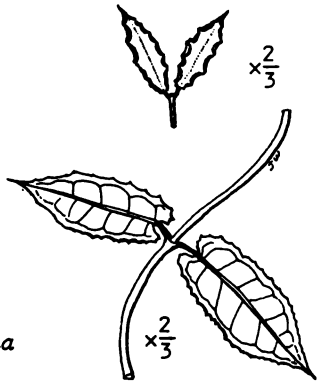
*F. Secondary veins faint or irregular, nor forming a curving pattern as above. Main lateral veins with looping connections close to the margin. Leaves rather dull above, with a finely hairy to smooth surface, 4 to 8 cm long, 1 to 2½ cm wide. Small twiner, recorded only from temperate Rf in the McPherson Range.



SLENDER SILKPOD *Parsonsia tenuis*

*B. Undersurface of leaves glabrous or with inconspicuous, sparse, fine hairs.

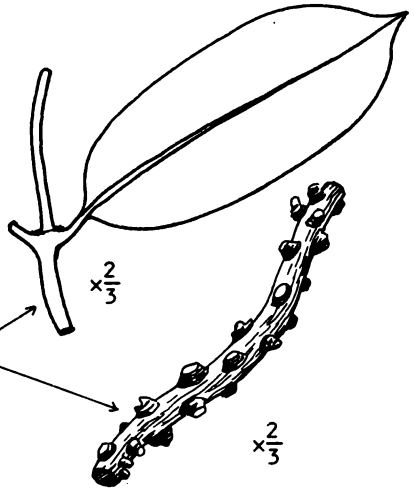
G. Margins of leaves crisped, i.e. finely wavy and with the margin turned under in each indentation. Leaves thin and soft, mostly small to very small, ½ to 4½ cm long, but occasional leaves to 7 cm long. Main lateral veins raised on the upper surface. Rare, small twiner in warmer Rf north from Lismore.



CRISPED SILKPOD *Parsonsia lilacina*

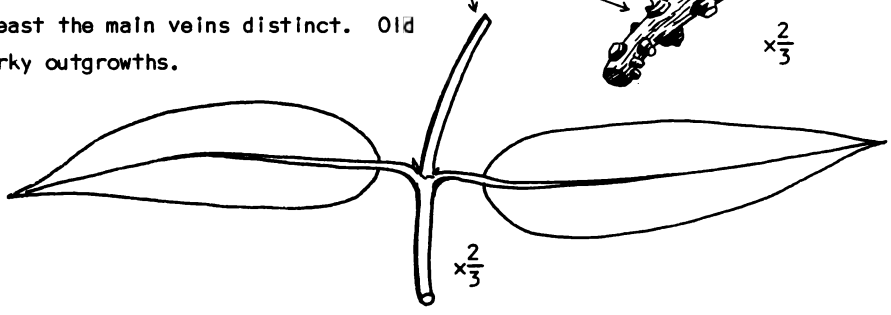
*G. Margins of leaves not crisped. Leaves mostly larger, 4 to 10 cm long or more.

H. Leaves very smooth on both surfaces, the veins invisible except for the midvein, or the main lateral veins faintly visible above. Leaves oblong-lanceolate or lanceolate or oblong-elliptical, ± rounded to cuneate at the base, 6 to 12 cm long. Old stems with many prominent corky outgrowths.

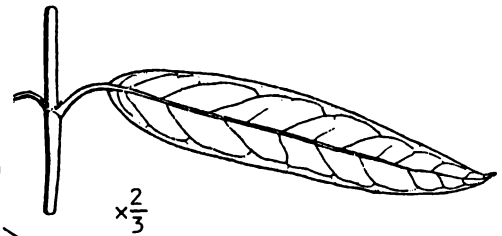


VEINLESS SILKPOD *Parsonsia rotata*

*H. Leaves with at least the main veins distinct. Old stems without corky outgrowths.



I. Leaves with the fine reticulate veins very distinct on both surfaces, raised, or becoming raised as the leaf dries. Leaves mostly thick and leathery, variable in shape and size, but often broadly oblong-lanceolate or elliptical and medium-sized to large (varying from 4 to 15 cm long on sun leaves, and up to 25 cm long on shade leaves). Undersurface pale yellowish-green, dull or glaucous. Very common climber in Rf and open forest north from Narooma.



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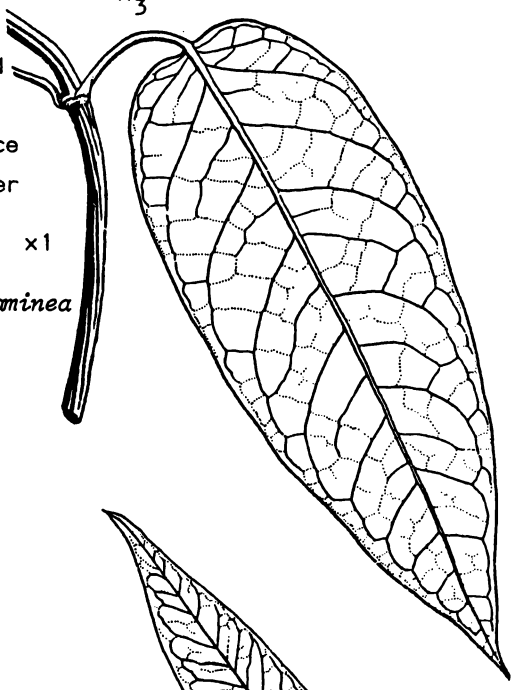
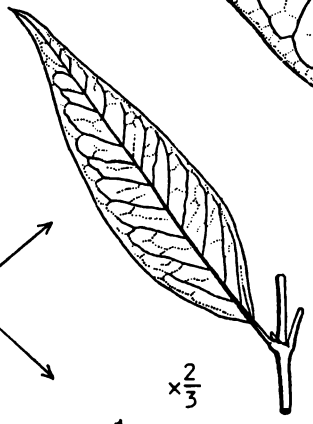


×1

COMMON SILKPOD *Parsonsia straminea*

*I. Fine reticulate veins ± invisible on the upper surface, obscure or distinct below but not prominently raised.

J. Leaves with 9 to 15 pairs of closely spaced main lateral veins, prominent on both surfaces and making very acute angles with the midvein. Leaves lanceolate or narrow-lanceolate, acute or acuminate, shortly tapering at the base, often rather thick and leathery, pale green below, 3 to 10 cm long. Twiner in cool mountain Rf, widespread.



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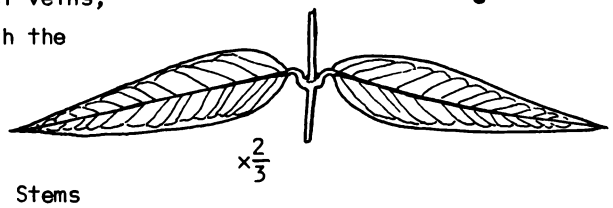
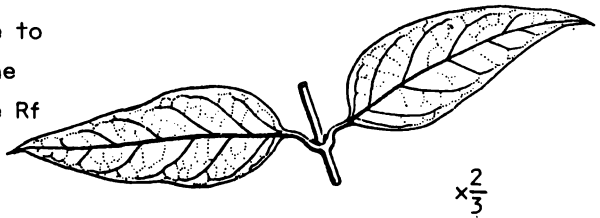
MOUNTAIN SILKPOD *Parsonsia brownii*

*J. Leaves with 3 to 8 (rarely 9) pairs of main lateral veins, mostly widely spaced and/or making wide angles with the midvein.



×$\frac{2}{3}$

K. Leaves on adult plant green, tinged with purple. Stems and young expanding leaves purplish. Dried leaves purplish-black on both surfaces. Leaves lanceolate to ovate-lanceolate, acute or acuminate, rounded at the base, 4 to 10 cm long. In cool- and warm-temperate Rf north from the Blue Mountains.

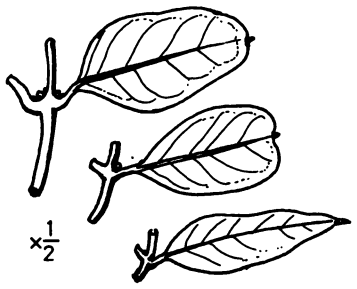


×$\frac{2}{3}$

BLACK SILKPOD *Parsonsia* species A
(wrongly known as *P. leichhardtii*)

*K. Leaves and stems on adult plants mostly green when fresh, green to pale brownish when dry. (Leaves on juvenile plants occasionally pale purplish below).

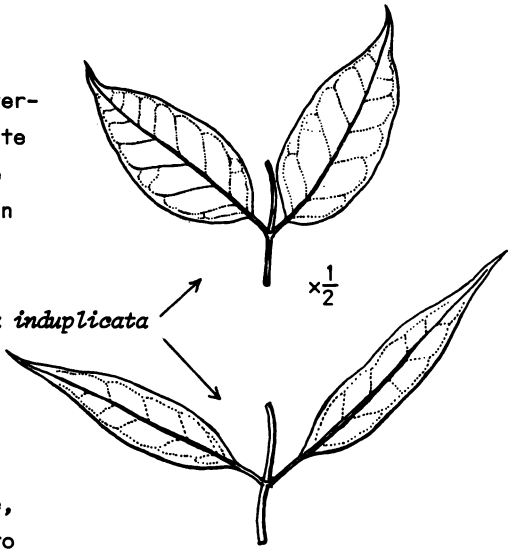
L. Leaves thick and tough, the apex either abruptly narrowed or shortly tapering to a short stiff point, cuneate or broad-cuneate at the base. Leaves lanceolate to broadly elliptical, 3 to 7 cm long, with a dull surface. In very dry Rf and vine thickets north from the Hunter River.



ROUGH SILKPOD *Parsonsia lanceolata*

*L. Leaves thin and soft, the apex very acuminate to a long, fine point. Absent from very dry Rf and vine-thickets.

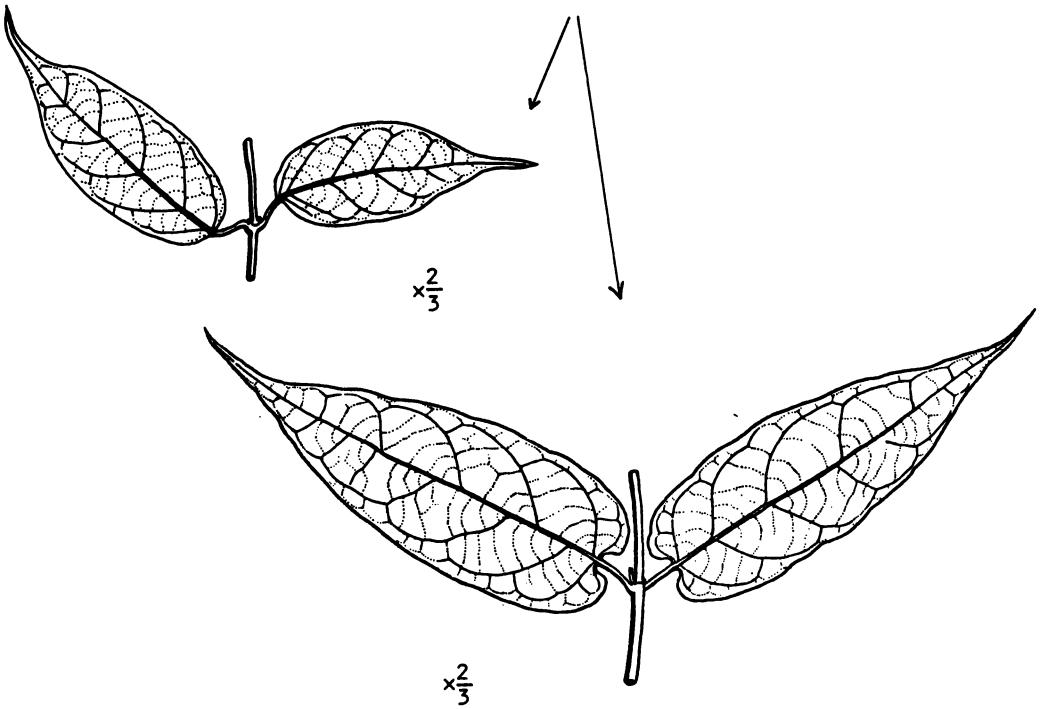
M. Secondary veins obscure, or sometimes faintly visible but few and irregular. Main lateral veins usually interconnecting to form a fine marginal vein. Leaves cuneate to rounded at the base, not cordate; narrow-lanceolate to ovate, 3½ to 9 cm long, glabrous. Slender twiner in temperate and subtropical Rf north from Stroud.



THIN-LEAVED SILKPOD *Parsonsia induplicata*

*M. Secondary veins distinct on the undersurface, curving downwards in a regular series linking the main lateral veins. Leaves cordate to rounded-truncate at the base, lanceolate, oblong-lanceolate or ovate-lanceolate, 4 to 12 cm long, glabrous or pubescent. Mostly in subtropical Rf, north from Lismore.

ACUMINATE SILKPOD *Parsonsia ventricosa*



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